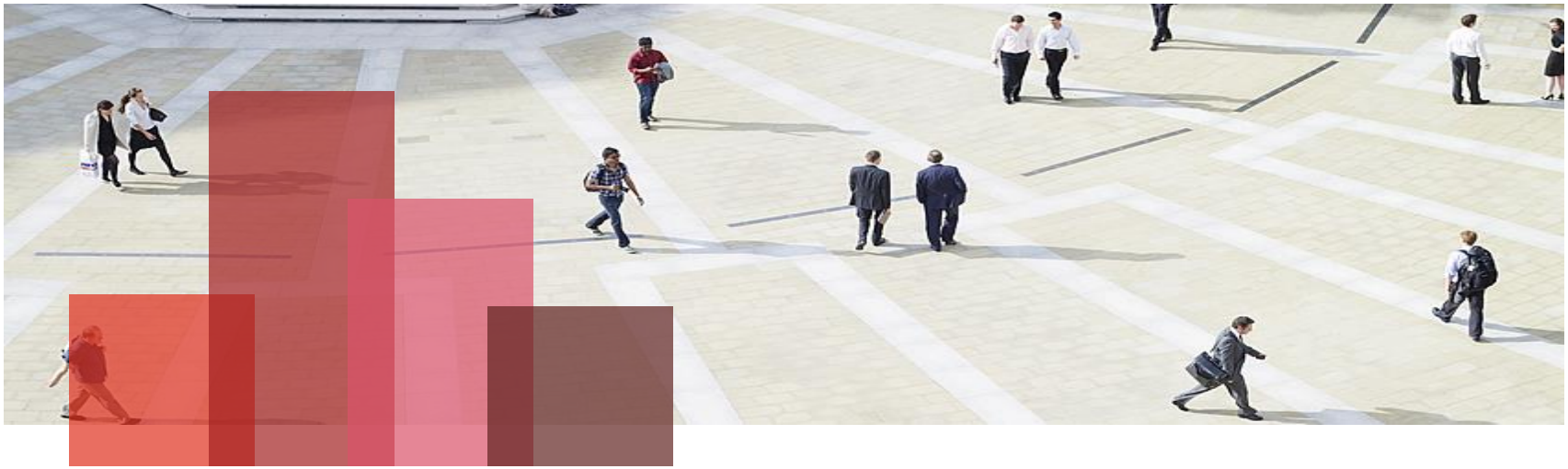
Kingdom of the Netherlands

ICT Sector study
Macedonia
Albania
Kosovo

2018

pwc



PricewaterhouseCoopers (PwC) was engaged by the Embassy of the Kingdom of Netherlands in Republic of Kosovo to perform a study on the ICT sector in Macedonia, Albania and Kosovo.

The Multi-Annual Action Plan adopted at the Western Balkan Summit in Trieste in 2017 highlights the significance of the digital agenda for the Western Balkan. As a result, a sector study is considered as a primary step to position potential stakeholders and to facilitate their plans to expand/develop in the region.

PricewaterhouseCoopers d.o.o.e.l Skopje (PwC Macedonia) supported by PwC Albania and PwC Kosovo, performed a detailed market research on the ICT sector in the MAK region (Macedonia, Albania and Kosovo) comprising the ICT ecosystem, status of the available workforce, ICT education, government support for the ICT sector, national strategic documents and government policies and regulations.

As part of the Project, ICT companies, government institutions, faculties were considered as a primary source of information on the sector

Sources of information

Macedonia

- State Statistical Office - www.stat.gov.mk
- Central Register of the Republic of Macedonia - www.crm.org.mk
- National Bank of the Republic of Macedonia - www.nbrm.mk
- Ministry of Information Society and Administration – www.mioa.gov.mk
- PricewaterhouseCoopers– www.pwc.com
- Macedonian Chamber of Information and Communication Technologies (MASIT) – www.masit.org.mk

Albania

- Ministry of Finance and Economy – www.financa.gov.al
- Albanian Investment Development Agency (AIDA) – www.aida.gov.al
- Institute of Statistics Albania (INSTAT) – www.instat.gov.al
- National Strategy of Science Technlogy and Innovation (2017 – 2022)

Kosovo

- Kosovo Agency of Statistics – http://ask.rks-gov.net/en/kosovo-agency-of-statistics
- World Bank Data Kosovo - https://data.worldbank.org/country/kosovo
- Kosovo IT Strategy 2016
- Kosovo ICT Association (STIKK) – www.stikk.org
- Ministry of Trade and Industry – https://kiesa.rks-gov.net/
- CEED Kosovo - http://ceed-kosovo.org/
- Innovations Lab Kosovo - http://kosovoinnovations.org/
- Innovation Centre Kosovo - https://ickosovo.com
- http://www.jic-ks.com/
- http://www.prishtinahackerspace.org/
- http://www.bone.vet/home/

I Macedonia
II Albania
III Kosovo

ICT Ecosystem
Available workforce
Review of the existing market
ICT sector support
Government policies and regulation
National strategic documents
ICT Infrastructure

Business opportunities for Dutch companies

Macedonia

- The Macedonian ecosystem is currently introducing mechanisms to go beyond startup education
- The talent pool has great potential for new founders or as part or teams that can build innovative products
- The Macedonian ECO system has low volume of launched products- low local innovations is economic opportunity

Albania

- Focus on energy efficiency and renewables sector through provision of required equipments and technology in place for all levels like: generation, transmission or distribution entities
- Health sector; further improvement and modernisation of the sector via supply of medical equipments (modernisation of existing labs etc)
- Infrastructure; supply of machineries and required technologies for development of construction projects related to road, railways and ports. In addition high priority is given to development of existing landfills and improvement of waste management processes
- Agriculture; supply chain improvement, quality assurance, packaging, storage and distribution processes. Given EU requirements to be in line through automation and introduction of modernized machineries and equipment.

Kosovo

- The National IT strategy envisions for “IT to become the main driver for economic growth, employment and innovation until the year 2020 by increasing the international competitiveness of the IT industry based on digital excellence.”
- IT & BPO Outsourcing – a fast growing sector
- Export-oriented market

Macedonia

KEY FACTS 2017

Name:	Republic of Macedonia
Area:	25,713 km²
Population:	2.083 million
National currency:	Macedonian denar (MKD)
GDP in current prices:	€10.07 bn
GDP per capita:	€4,853
Inflation rate:	1.4%
Corporate tax:	10%
Employment rate:	44.1%

I ICT Ecosystem

Macedonian ICT ecosystem

Creative IT professionals	**Academics**
Tech Companies	**Investors**
ICT Chamber of Commerce	**Accelerators**
Entrepreneurs	**Ministries and public agencies**

ICT ecosystem (1/2)

Ecosystem Dimension	Challenge / Opportunity	Recommendation
1. Strategic Sectors	Focus limited resource and funding on sector activity where Macedonia has a natural advantage and strategic interest - AgriTech - Energy & Renewables - Apparel & Fashion - Tourism	- Big Bets / National challenges that convene ecosystem participants in a concerted development effort. - Links to investments into R&D, Incubation and Acceleration activity.
2. Policy and Regulatory environment	- Create incentives that foster R&D investment and reduce burdens for new businesses	- Ironing out of administrative processes - SEIS/EIS style tax provisions for investors - R&D tax credits - Grace period for startups
3. Digital Skills & Talent	- Develop more and better skilled graduates - Encourage entrepreneurship as a career choice - Improve research collaboration	- Effective implementation of the ambitious Innovation Strategy 2016 - 2020 - 2nd chances for failed entrepreneurs - Incubation programme at select university departments
4. Start-up Initiatives	Support start-ups in their early Initiatives that support start-ups in their early stages - Mentoring - Funding - Workspaces	- Overall well-connected life cycle support programmes from foundation to scaling. Coordination of donor grants - Angel / Seed Investor programme - Mentorship initiative, incl. with diaspora - Expansion of co-working offerings - Accelerator programme aligned with strategic sectors

Source: TechcityUK and PwC, Digital ecosystem opportunity for the Western Balkan region 2018

ICT ecosystem (2/2)

Ecosystem Dimension	Challenge / Opportunity	Recommendation
5. Scale-up	Support initiatives for the growth and scaling phases	- Not a top priority at this maturity stage. - Connect with larger WB5 regional or international programmes
6. Collaboration	- Develop closer ties between ecosystem, R&D facilities and private industry	- Pilot programmes for corporate challenges - PwC collider or TCUK challenges - Communication / education activity to raise awareness with business leaders -
7. Profile	Connecting and promoting the developing ecosystem, within Macedonia and internationally	- Ecosystem Map - Celebrating Role Models - PR/Media/TV campaign for entrepreneurship
8. Ecosystem initiative	Provide a voice for and coordinating entity that can orchestrate ecosystem development initiatives	- Support for the further development of Startup Macedonia or a similar organisation

Source: TechcityUK and PwC, Digital ecosystem opportunity for the Western Balkan region 2018

Doing business and improvement of government policies

Labour force

- Competitive labour cost
- Young and well educated population with foreign language knowledge

Macro factors

- Free economic zones
- Optimal geographical location
- Skopje region is the most developed
- Doing Business ranking (11th among 190 countries) with best indicators relating to:
  - Protecting minority investors (Rank 4th)
  - Trading across borders (Rank 27th)
  - Getting Credit (Rank 12th)

Digital transformation

- One of the smallest gaps in in the region regarding digital transformation in comparison to the EU
- 2nd in Network readiness index in the region after Slovenia (some of the measured parameters are Political and Regulatory environment, Business and innovation Environment, Infrastructure, Affordability, Skills, Government usage

Improvements for government policies

- Support for the further development of Startup Macedonia or a similar organisation
- Further improvement of legislation related to property rights and urban planning
- Reduce the informal economy, including undeclared work.

Background of the survey

- PwC ran a survey among local start ecosystem players with the aim of assessing the current situation. Main areas covered through this exercise where related to:
  - Policy and regulatory environment
  - Education level and existing skills
  - Digital infrastructure
  - Stakeholder collaboration
  - Financing

- The survey was delivered in all Western Balkan countries with 20 participants from Macedonia involved and covering different roles like policymakers/regulators, start-ups representatives and supporters of the ecosystem. Alternatives to questions varied from negative to great conditions.

Extremely unhelpful

Unhelpful

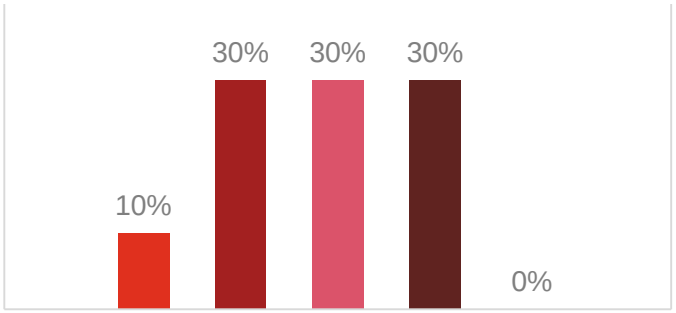
Neutral

Good conditions

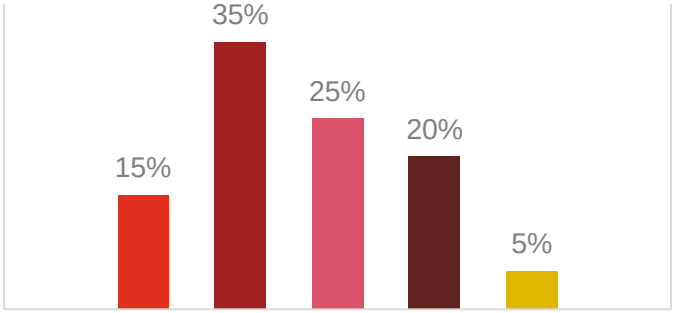
Great conditions

Survey results (1 of 2)

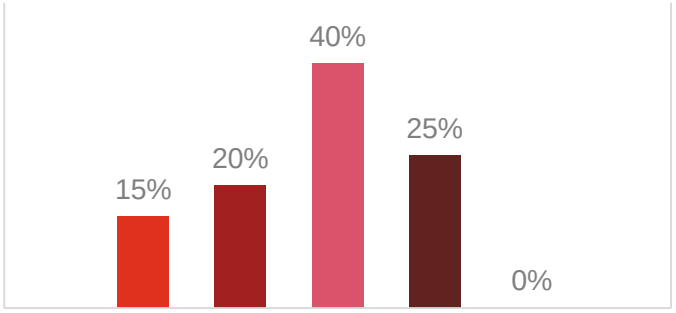
How adequate is the current policy and regulatory environment for your business? (taxes, permits, labor laws, etc.)



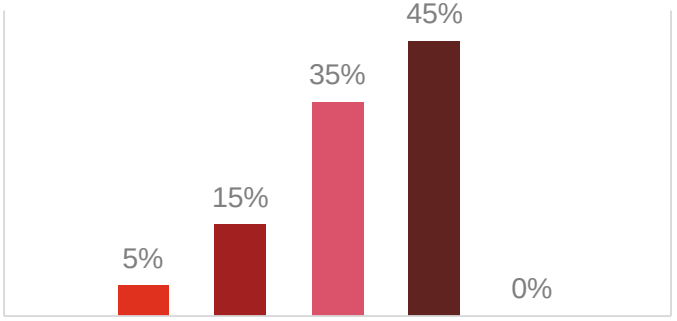
How have policies and regulation developed over the last 3-4 years?



Rate the quality of schools and training for people working in the digital tech sector in your local area?



To what extent is accessing finance a challenge for your company / members of your ecosystem?

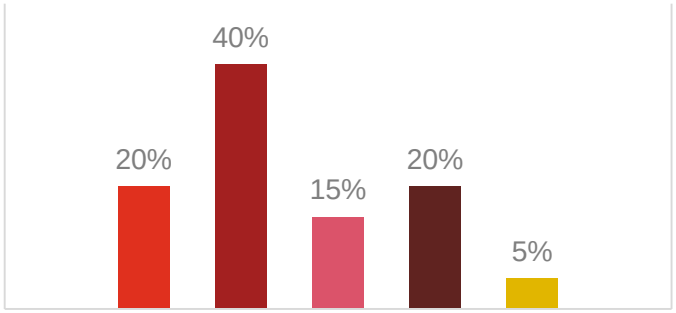


Legend:

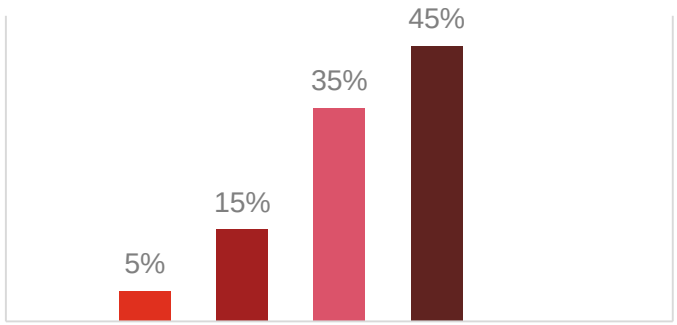
- Extremely unhelpful
- Unhelpful
- Neutral
- Good conditions
- Great conditions

Survey results (2 of 2)

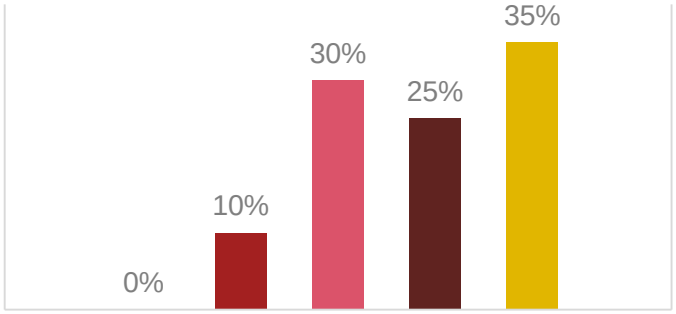
To what extent is recruiting skilled workers to your company / for start-ups a challenge?



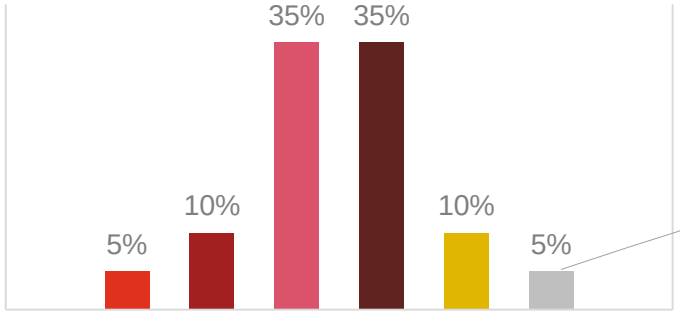
To what extend is access to mentoring and advice a challenge to your company / ecosystem?



How satisfied are you with your local digital infrastructure (broadband & mobile in regards to availability, speed and cost)?



How satisfied are you with the availability of affordable workspace / co-working spaces in your local area?



Legend:
- Extremely unhelpful
- Unhelpful
- Neutral
- Good conditions
- Great conditions

II Available workforce

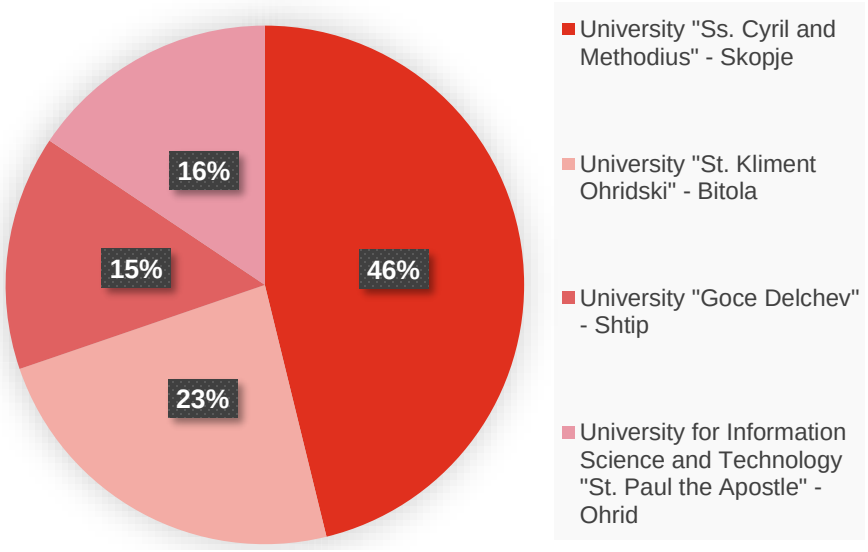
Potential workforce

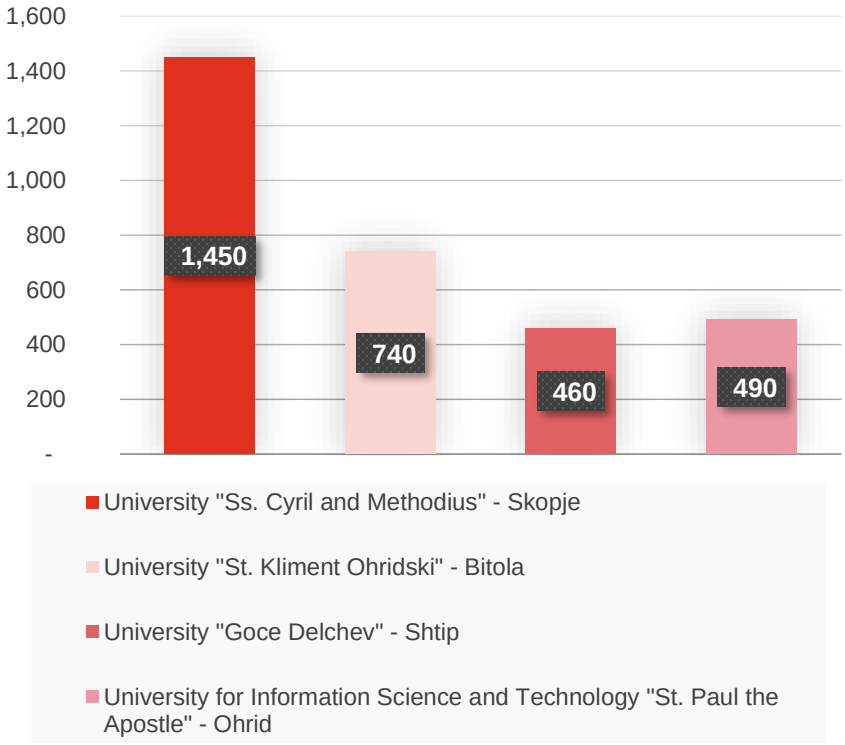
	Name of the institution	Students enrolled in ICT programmes	% of students enrolled in ICT programmes	% of students graduated in ICT programmes
Public	University "Ss. Cyril and Methodius" - Skopje	5.391	21,60%	15,91%
	University "St. Kliment Ohridski" - Bitola	1.541	28,25%	19,01%
	University "Goce Delchev" - Shtip	1.910	30,04%	19,13%
	University for Information Science and Technology "St. Paul the Apostle" - Ohrid	360	100,00%	100,00%
	State University - Tetovo	829	10,36%	16,39%
Private	European University - Skopje	30	4,04%	16,00%
	SEE University - Tetovo	347	18,86%	10,64%
	FON University - Skopje	38	6,67%	2,30%
	American College - Skopje	72	11,87%	6,60%
	MIT - Management and Information Technologies - Skopje	11	0,58%	0,00%
	International Slavic Institute - Sveti Nikole	36	10,00%	5,48%
	International University Vision	19	8,19%	0,00%

The data refers to the year 2016 and is provided by the State Statistics Office

- The vast majority of students opt for public universities when it comes to ICT programmes
- The only university dedicated exclusively to ICT programmes is a public university
- The interest for ICT programmes and completion rates are volatile, as shown in the table

Distribution of new positions regarding ICT programmes at public universities for school year 2017/2018





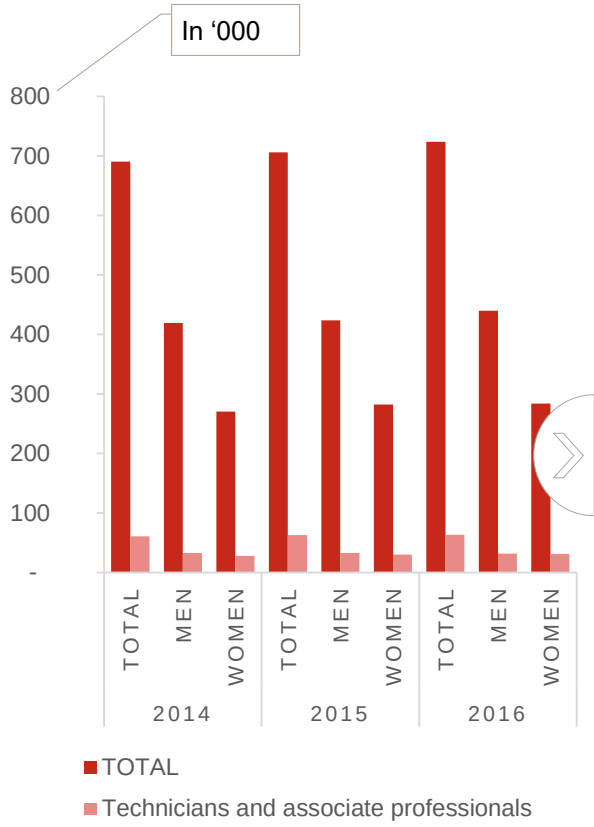
Source: State Statistical Office

all data presented in Total # of ICT students

University Ss. Cyril and Methodius participates with 46.17% in the new positions

Employees by sectors and divisions of activity

	2013	2014	2015	2016
TOTAL	31.382	32.728	37.180	36.484
INFORMATION AND COMMUNICATION	**9.097**	**9.663**	**11.436**	**12.101**
Motion picture, video and television programme production, sound recording and music publishing activities	459	552	633	743
Programming and broadcasting activities	2.016	2.038	2.256	2.397
Telecommunications	3.519	3.146	3.876	3.699
Computer programming, consultancy and related activities	2.432	3.140	3.707	4.277
Information service activities	671	787	964	985
OTHER SERVICE ACTIVITIES	6.594	6.701	7.154	6.141
Activities of membership organisations	1.468	1.719	1.968	1.978
Repair of computers and personal and household goods	1.087	1.021	1.045	910
Other personal service activities	4.039	3.961	4.141	3.253



Source: State Statistics Office

Source: Statistical office of Republic of Macedonia 2016

- Out of the total number of employees, 3.41% are employed in the IT or IT-related sectors
- Even though there is gender disparity overall in terms of employment, it seems that there is gender equality in the IT sector

Average salary by sectors, in Euro

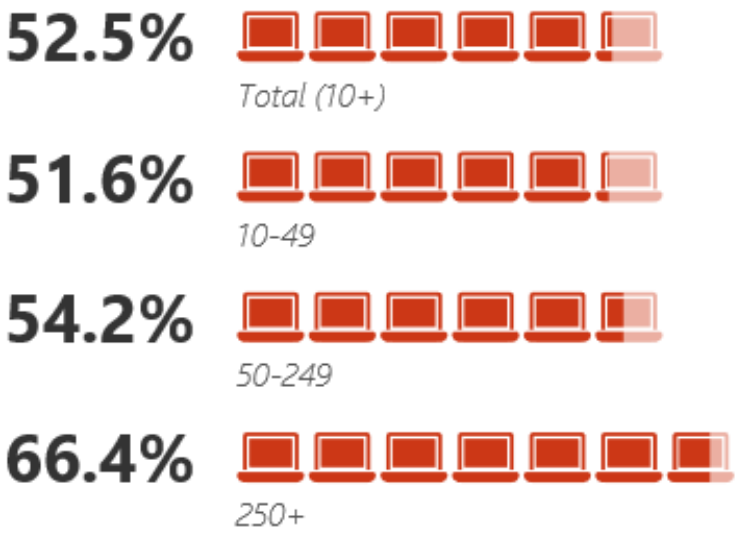
	2013	2014	2015	2016
TOTAL	344	348	356	363
INFORMATION AND COMMUNICATION	572	564	572	593
Motion picture, video and television programme production, sound recording and music publishing activities	278	330	431	512
Programming and broadcasting activities	350	367	371	381
Telecommunications	698	657	641	666
Computer programming, consultancy and related activities	668	707	764	805
Information service activities	518	530	504	504
OTHER SERVICE ACTIVITIES	383	388	424	425
Activities of membership organisations	470	500	547	551
Repair of computers and personal and household goods	462	400	424	301
Other personal service activities	296	267	277	286

Source: State Statistics Office
Note: All figures are in euros and are translated with the exchange rate available at the end of the year

- The average salary in the ICT sector is 61.2% higher than the national average
- On average, computer programmers receive the highest salaries

III Review of the existing market

Companies that use social media (categories by number of employees)



Source: State Statistics Office

- The majority of Macedonian companies with more than 10 employees use social media
- The proportion of companies that use social media increases with company size

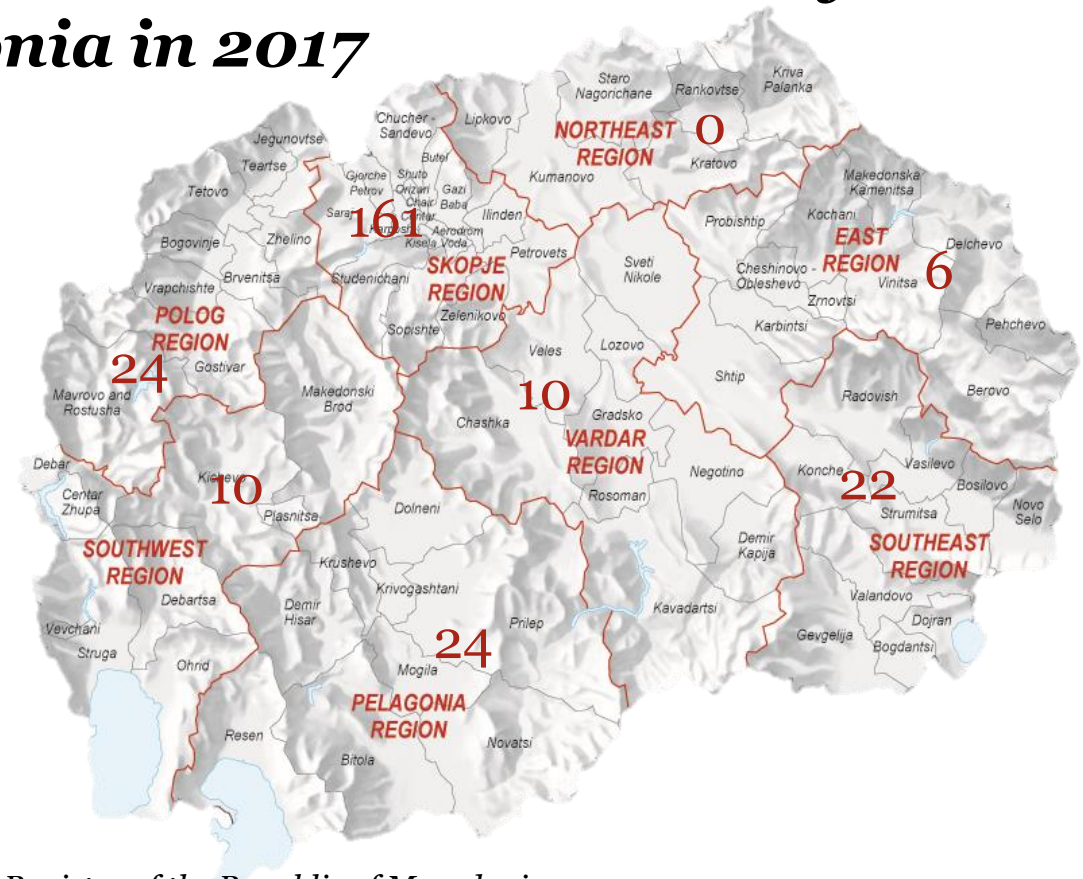
ICT service exchange between Macedonia and rest of the world

	2012	2013	2014	2015	2016
ICT service exports (BoP, current '000 €)	246.950	268.558	317.055	312.042	378.688
ICT service exports (% of service exports, BoP)	23,84%	24,06%	22,20%	22,30%	24,94%
Computer, communications and other services (% of commercial service exports)	58,52%	58,33%	58,64%	58,78%	59,41%
Communications, computer, etc. (% of service imports, BoP)	47,43%	48,59%	51,27%	55,62%	54,68%
Computer, communications and other services (% of commercial service imports)	45,61%	47,01%	50,04%	54,81%	53,80%

Source: World Integrated Trade Solutions

- Since 2014, computer, communications and other services make up a majority of commercial service exports
- Imports and exports of IT services are deeply intertwined

Established entities in the area of ICT in Macedonia in 2017



Source: Central Register of the Republic of Macedonia

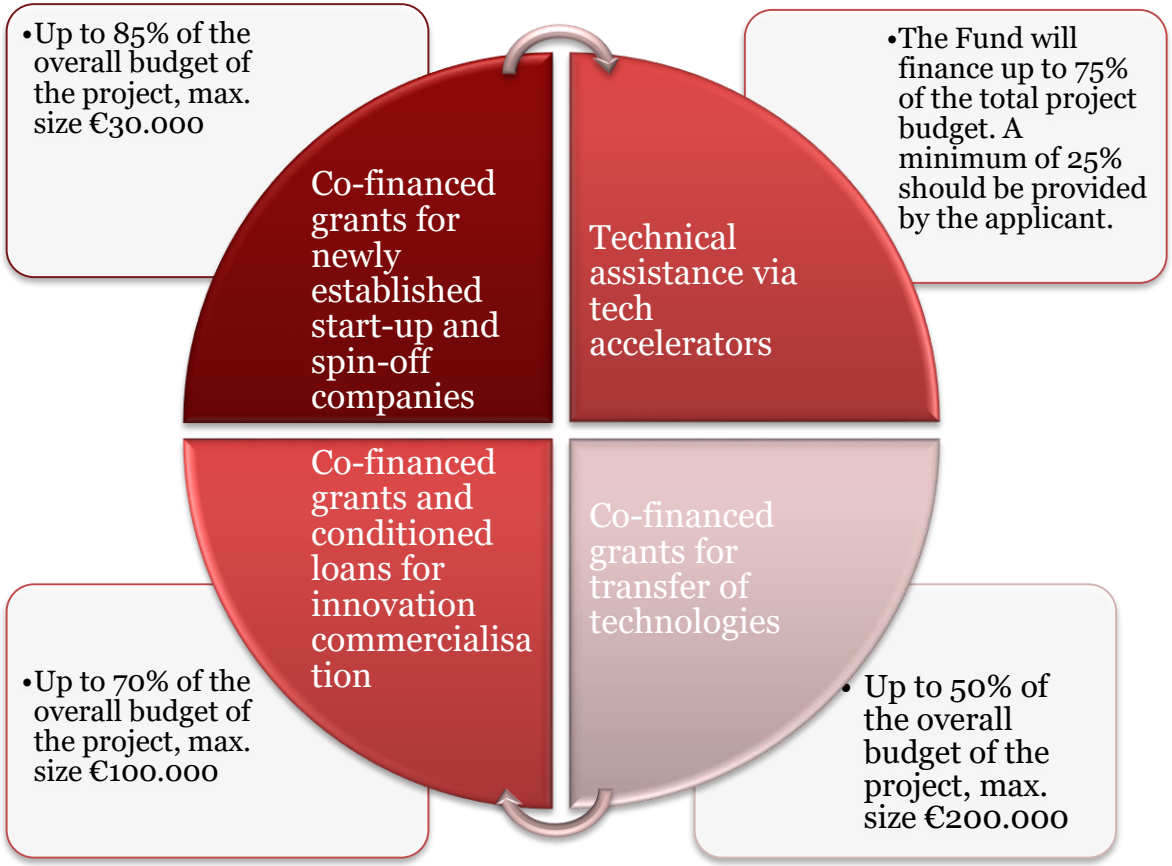
- The region of Skopje is leading in attracting new ICT companies
- The Northwestern and Eastern regions are among the least attractive for setting up ICT companies

IV ICT sector support

Sources of funding

Public	Fund for Innovation and Technological Development
	Employment Service Agency of the Republic of Macedonia
	Agency for Promotion of Entrepreneurship of Republic of Macedonia
EU funding	Western Balkans Guarantee Facility
	COSME
	Horizon 2020
Private funding and other	Seavus Accelerator
	Hub Skopje Business Accelerator

Fund for innovation and technological development (state owned)



V Government policies and regulation

General laws

- Law on Labour Relations
- Law for protection against harassment at work
- Law on health and safety at work
- Law on financial discipline
- Law on payment operations
- Law on archiving
- Companies Law
- Law on protection of the use of Macedonian language
- Law on whistle-blowers
- Law on foreign exchange operations
- Inventory obligations
- Transportation regulations
- Law on protection and rescue
- Law on personal data protection
- Law on protection against smoking

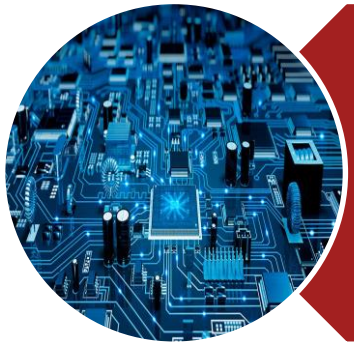
Detected issues with industry-specific laws

- The impossibility of implementing the Law on Waste, the Law on Waste from Electrical and Electronic Equipment and other laws in the field of waste management
- VAT treatment in various types of software-related services - ICT sector
- Proper way of determining the value of the goods in the customs clearance procedure - requesting the value of the goods to be determined in real terms according to the market conditions
- Need for practice Internships outside the educational process, employers do not have the legal possibility to hire people to perform practical work with completed education

VI National strategic documents

National Strategy for Information Society Development and Action Plan - The main challenge in building the Strategy is defining the economic, social and political vision of the knowledge-based society through the development and application of ICT in all spheres of life, creating modern and efficient services for the citizens and the business community

National Strategy for Development of Electronic Communications with Information Technologies - The main challenge of the strategy is to enable aggressive introduction and massive efficient use of electronic communications and information technologies, thus contributing to the inclusion of the Republic of Macedonia in the global networked economy and achieving a significant leap in the economy (leap frogging)



National Strategy for the development of next-generation broadband - Broadband enables the reorganization of production and operation processes

both for the business sector and for the administration, i.e for the development of the networked economy and for

the transition to knowledge-based societies.

VII ICT infrastructure

Use of ICT by households for 2016

	Percentage (%)
Households with PC (desktop or laptop)	/
Internet Access	
Households with Internet access	75.3%
Households without Internet access	24.4%
Households that are unaware whether they have access to the Internet	0.3%
Broadband vs. mobile data	
Households with broadband Internet connectivity (fixed or mobile)	74.7%
Internet connectivity via mobile broadband connection, 3G or better (e.g. UMTS)	30.2%
Housleholds with no internet access	
Since they do not feel they should	12.5%
Since they lack experience or skills	8.7%
Since the equipment is expensive	7.1%
Since the price to access is high	6.3%
Since they have access at another place	0.9%
Since they do not have broadband Internet in the area	0.8%
Since they have safety reservations	0.3%

Source: State Statistics Office

- ¾ of Macedonian households have access to the Internet
- 0.3% have fears that their safety might be compromised

Use of Internet for private purposes for 2016

	Percentage of all respondents
Leasure	
Reading or downloading online newspapers, magazines	65.2%
Listening to music (e.g. web-radio or music stations)	53.7%
Playing/downloading games, photos, films or music	37.6%
Uploading personal content on webpages	26.1%
Watching TV over the Internet	25.3%
Communication	
Social networks	82.5%
Telephony via the Internet/video-calls (webcam)	75.1%
Sending/receiving e-mail	54.7%
Research	
Finding information about health-related issues	54.9%
Finding information about products/services	53.7%
Learning - attending online courses	6.4%
Services	
Cloud services	30.2%
Using services for the purposes of travel and leisure	23.9%
Online-banking	12.0%
Sale of products/services (e.g. eBay)	7.2%
Creating webpages or blogs	7.1%

12%

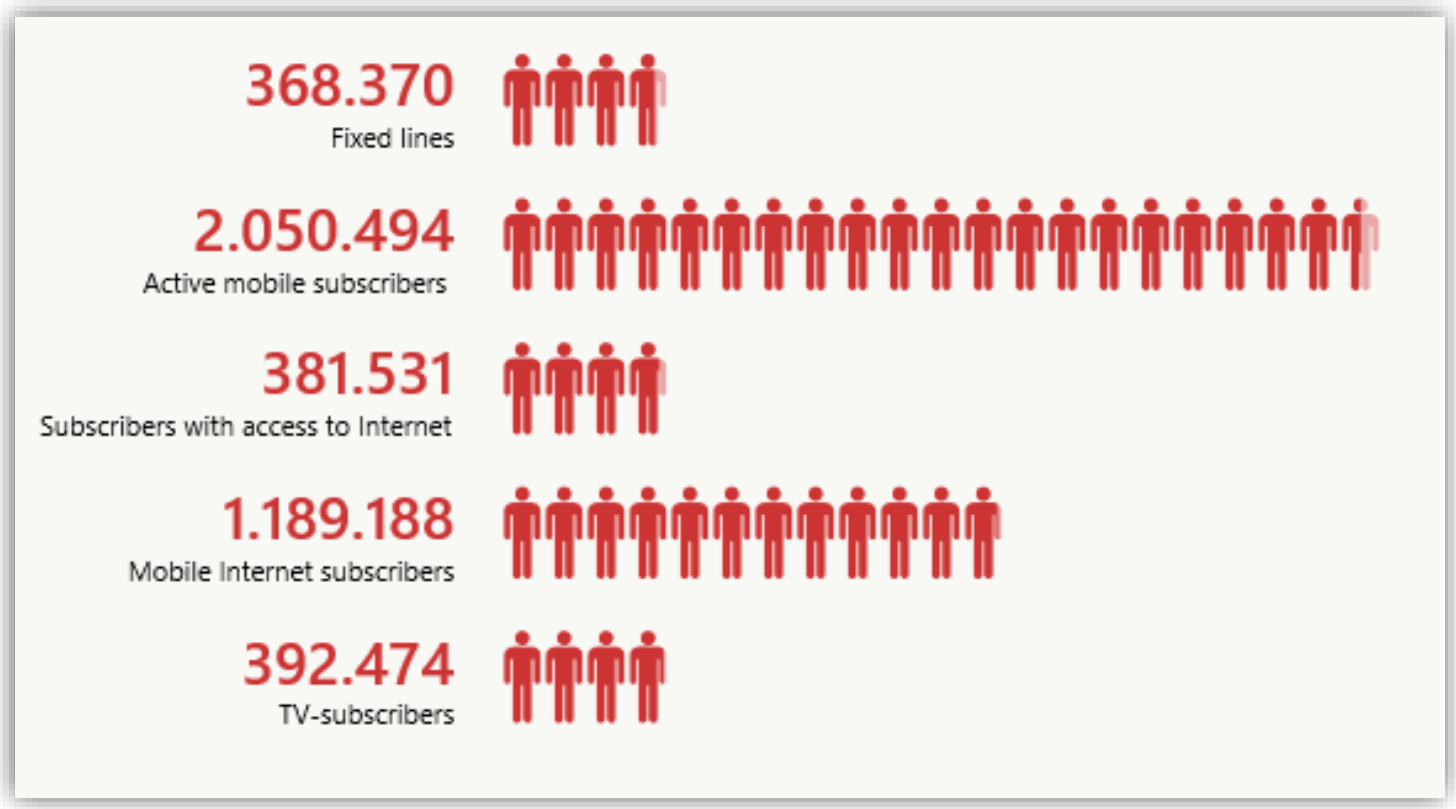
of respondents use online-banking, whereas more than 80% use social networks

30.2%

use cloud service solutions

Source: State Statistics Office

Key indicators for the development of ICT for 2016



Source: Agency for electronic communications

Findings from EU progress reports

"...some concerns remain regarding the implementation of the law on electronic communications. The quality parameters for internet access were increased only to the internet access next to the main roads."

"As regards the information society, a track record needs to be built up on the application of the electronic signature. Capacities to ensure cyber security remain low and the national cybersecurity strategy should be adopted."

"Electronic government and interoperability are not yet operational, despite the equipment and software provided. A long-term 2020 digital strategy needs to be developed. Barriers to e-commerce, including customs duties and VAT on imports for small value items, still have to be removed."

Albania

KEY FACTS 2016

Name:	Republic of Albania
Area:	28,748 km²
Population:	2.88 million
National currency:	Albanian lek (ALL)
GDP in current prices:	10,70 billion Euro
GDP per capita:	3,727 Euro
Inflation rate:	1.3%
Corporate tax:	15%
Unemployment rate:	15.6%

Macroeconomic situation

Macroeconomic indicators

Indicators	FY13	FY14	FY15	FY16	FY17	FY18 (est)
Population (in mln)	2.90	2.89	2.88	2.88	2.88	2.87
Real GDP growth (in %)	1.1	1.8	2.2	3.4	3.9	4.2
GDP per capita (euro)	3,323	3,450	3,546	3,727	4,026	4,268
Inflation (in %)	1.9	1.6	1.9	1.3	2	2.7
Employment (in %)	N/A	44.3	46.2	48.7	50.3	N/A
Average salary (euro)	N/A	337	347	340	N/A	N/A
Corporate Income Tax rate (In %)	10	15	15	15	15	15

Source: Ministry of Finance and Economy, Albania Exchange rate 1 Eur/135 ALL

- After a deceleration of growth in 2009-2013, the economic activity has been gradually picking up since 2014. The GDP grew by 3.4% in 2016 and 3.9% in 2017. GDP is expected to increase to 4.2% in 2018 and to reach 4.3% in 2019. The economic growth is driven by the positive performance of the services sector, the growth of private investments, net exports and private consumption.
- The economic growth in 2017 is further supported by growing employment. The unemployment rate is estimated to decline from 13.9% in 2017 to 12.9% in 2018. The employment growth partially relates to increasing formalization of the labor market following the government's actions against informality in late 2015. Employment grew with highest pace in services and manufacturing.
- Although 2017 inflation rate of 2% was higher than the previous year, it still remained below the Bank of Albania's target band due to lower oil and food prices. The annual average inflation is expected to increase to 2.7% in 2018 and remain at the level of 3% in the next 2 years.
- The country terrain is mostly mountains (almost 70% coverage), combined with coastline and numerous rivers and lakes, and covers an area of 28,748 km². The Albanian official currency is Albanian Lek (ALL).

Doing business and recommendations for improvement of government policies

- Competitive labour cost
- Young and well educated population with foreign language knowledges
- Free economic zones
- Stable macroeconomic situation
- Optimal geographical location
- Improvement in Doing Business ranking (65th among 190 countries) with best indicators relating to:
  - ➢Protecting minority investitors (Rank 20th)
  - ➢Trading across borders (Rank 24th)
  - ➢Getting Credit (Rank 42th)
- The Global Competitiveness Index (2017-2018) has assessed Albania with 4.2 points with the highest score compared to the other countries of the region.

- Continue fiscal consolidation to meet the medium-term target for public debt reduction.
- Bolster financial stability further by continuing to promote the resolution of NPLs and the use of the domestic currency.
- Reduce the informal economy, including undeclared work.
- Further improvement of legislation related to property rights.

Business opportunities in the ICT sector

1 Development of e-services

- *Despite the small share in the software development there is room for potential growth. One of the main government priorities is the development of public service delivery focusing especially on e-services and related platforms in place. Main areas for further development especially relying on international expertise are:*
  - *infrastructure management services*
  - *software related services*
  - *Further R&D software*
  - *IT consulting services*

2 BPO sector – an employment generator

- The BPO sector in Albania is one of the most developed in the last 5 years resulting to be a real employment generator, especially for youth generation.Referring Albanian Outsourcing Association (AOA) members there are around 300 call-centres in Albania with over 20.000 employees (June 2015). Most of the players in the market are Italian companies but there is room for growth for other European countries and companies.

3 Introduction of technology in many priority sectors like health and agriculture

- Further improvement and modernization of health sector based on supply of up to date medical equipment/medical labs and reliance on technology (best practices) from European countries.
- Automation and further improvement of technology in place related to existing landfills and improvement of waste management processes
- Process automation and further technology or systems improvement in agriculture sector related to specific processes like; packaging, storage and distribution or supply chains.

I ICT Ecosystem

ICS Ecosystem (1/2)

Ecosystem Dimension	Challenge / Opportunity
1. Strategic Sectors	Focus limited resource and funding on sector activity where Albania has a natural advantage and strategic interest - AgriTech - Energy & Renewables - Apparel & Fashion - Tourism - Smart public infrastructure
2. Policy and Regulatory environment	- Create incentives that foster R&D investment and reduce burdens for new businesses
3. Digital Skills & Talent	- Develop more and better skilled graduates - Encourage entrepreneurship as a career choice - Improve research collaboration
4. Start-up Initiatives	Initiatives that support start-ups in their early stages - Mentoring - Funding - Workspaces

Source: TechcityUK and PwC, Study on the Digital ecosystem opportunity for the Western Balkan region 2018

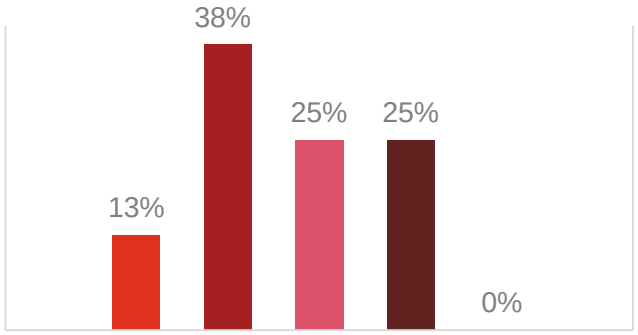
ICS Ecosystem (2/2)

Ecosystem Dimension	Challenge / Opportunity
7. Profile	Connecting and promoting the developing ecosystem, within Albania and internationally
8. Ecosystem initiative	Provide a voice for and coordinating entity that can orchestrate ecosystem development initiatives

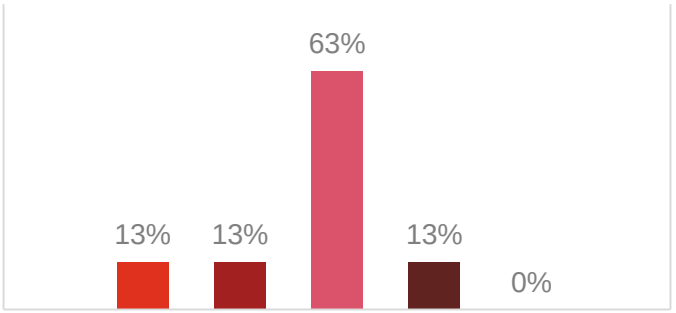
Source: TechcityUK and PwC, Digital ecosystem opportunity for the Western Balkan region 2018

Survey results (1 of 2)

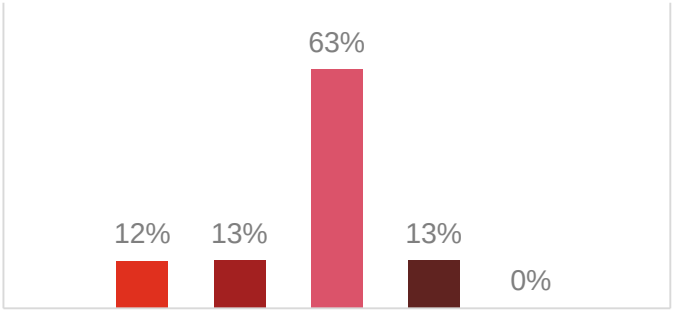
How adequate is the current policy and regulatory environment for your business? (taxes, permits, labor laws, etc.)



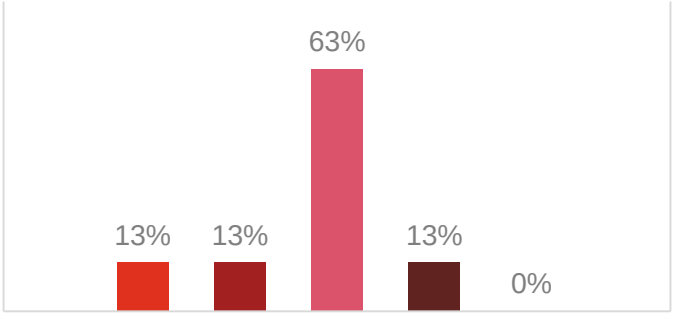
How have policies and regulation developed over the last 3-4 years?



Rate the quality of schools and training for people working in the digital tech sector in your local area?



To what extent is accessing finance a challenge for your company / members of your ecosystem

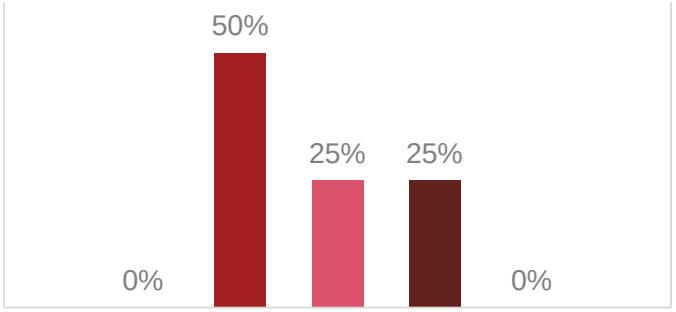


Legend:

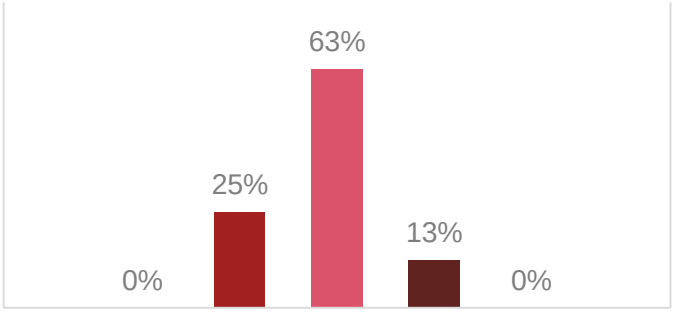
- Extremely unhelpful
- Unhelpful
- Neutral
- Good conditions
- Great conditions

Survey results (2 of 2)

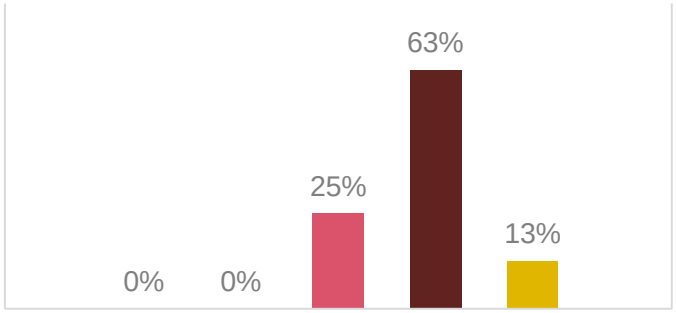
To what extent is recruiting skilled workers to your company / for start-ups a challenge?



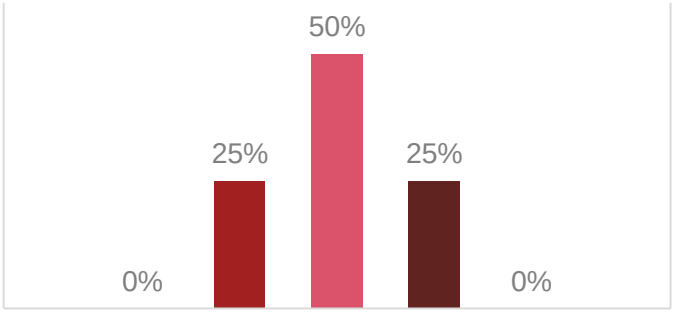
To what extend is access to mentoring and advice a challenge to your company / ecosystem?



How satisfied are you with your local digital infrastructure (broadband & mobile in regards to availability, speed and cost)?



How satisfied are you with the availability of affordable workspace / co-working spaces in your local area?



Legend:

- Extremely unhelpful
- Unhelpful
- Neutral
- Good conditions
- Great conditions

Accelerators and incubators

Protik Innovation Center is one of the two active seed accelerators in Albania. It mainly focuses on ICT education and covers laboratory provision and other required support to startups. There is a future plan for an accelerator programme as well which is highly depended on financing sources

Oficina covers and provides support to a number of start-up teams. Interested parties have the chance to test and certify their ideas and to connect with potential investors. Although the accelerator has a very good output and feedback it still struggles to find sufficient funding to sustain its operations.

While there is a lack of incubators there are two seed accelerators identified in Albania like Protik and Oficina both located in Tirana.

Co working spaces

Co-working spaces in Albania are available in limited number and capacity only in Tirana. All of them provide not only physical workspace but also aim at connecting their community of founders and to provide coaching and support programmes.

The small number of co-working spaces at first sight seems appropriate for the small number of start-ups that get founded in Albania. Our survey confirms this assumption, with 75% of all respondents indicating that the level of availability is either neutral or positive.

Innovation Hub Tirana

Innovation Hub currently putted on hold is an 800 sq. space in Tirana that provides workspaces and community building activities. It can host up to 10 start-up teams mainly focusing on coaching, mentoring and acceleration activities. The project was launched from the Ministry of State for Innovation and Public Administration and financed by the Italian-Albanian Debt for Development Swap Program IADSA.

Tirana Business Park, Tirana

Tirana Business Park is a project aiming to establish a business park and an economic center of European standards, and to give the Albanian area a real potential of economic and social development.

The business park is open to all businesses and offers co-working spaces.

Tirana Talent Garden, Tirana

Is an international network with a focus on digital offering a space for technology/digital/creative entrepreneurs, freelancers and startups.

Located in Tirana is one of the first campus in Albania that can host up to 48 members. It is part of the Italian Talent Garden Network and seeks to combine digital, tech and creative talent. Talent Garden thus far remains a provider of work spaces rather than an entrepreneurial community center.

Coaching and mentoring

Oficina

- Oficina has its support from private companies and international donors like Deutsche Telekom, PwC Albania, Swiss Contact which support the team to draw upon technical coaching expertise of these organizations.
- Main goal is to offer support via workshops and specific program with the aim to accelerate learning, talks to great thought leaders and mentors, and connect with new collaborators and other entrepreneurs. Education on business model utilization of experts, mentors and business professionals

Protik Mentor Club

- ICT hub Protik provides access to successful Albanian entrepreneurs in the ICT industry. Additional speed dating events help to build connections with industry experts.
- Protik is quite possibly the most advanced support organization in Albania and seeks to more formally structure their supply of mentors and community requests.

Yunus

- Yunus provides mentorship and acceleration support for social businesses. Supported by USAID, the programme operates all across the WB6 region, including in Albania. The mentorship support is very systematic and draws upon the international Yunus network. However, the focus on social impact concepts and the small number of start- ups in their programmes limits its impact for the larger and commercially focused part of the ecosystem

Support

II Available workforce

Available workforce statistics (1/2)

Labor force participation rate

Age		2014	2015	2016	2017
15-29	Total	41.9	44.5	45.6	45.5
	Male	51.3	52.8	51.6	52.8
	Female	32.1	35.4	38.7	37.2
30-64	Total	72.3	74.5	76.1	77.0
	Male	84.5	85.2	85.8	87.8
	Female	61.2	64.6	66.8	66.7

Employment rate

Age		2014	2015	2016	2017
15-29	Total	28.3	29.8	32.4	33.8
	Male	33.0	35.7	36.3	38.5
	Female	23.3	23.1	28.0	28.3
30-64	Total	62.7	65.2	67.2	68.7
	Male	72.7	74.8	75.4	77.9
	Female	53.6	56.3	59.3	60.0

No. of employees/No of entities in the ICT sector

No. of employees /No. of entities	2014	2015	2016	2017
1-4	2,217	2,314	2,089	2,205
5-9	150	142	180	166
10-49	95	100	138	124
50+	33	34	46	35
Total	2,495	2,590	2,453	2,530

Source: Institute of statistics

Skilled youth labor force with improved technical skills and knowledge of foreign language; mainly in English and Italian

69% *official employment rate followed by a positive trend in the last 4 years*

2,530

ICT active entities, over 85% have max 4 employees

Available workforce statistics (2/2)

Gross average salaries as per activity 2016 (Euro)

Sector	Total	Male	Female
Agriculture, forestry and fishing	245	247	240
Mining and quarrying	441	444	418
Manufacturing	233	272	209
Electricity, gas, steam and air conditioning supply	506	496	543
Water supply; sewerage, waste management	258	256	264
Construction	270	269	273
Wholesale and retail trade	257	271	234
Transportation and storage	315	308	335
Accommodation and food service activities	187	186	189
Information and communication	519	530	505
Professional, scientic and technical activities	512	541	474
Education	423	450	411
Human health and social work activities	359	427	334
Arts, entertainment and recreation	270	253	327
Other service activities	369	386	357
Activities of households as employers	216	228	208

Source: Institute of statistics

519 EUR

Average salary in ICT sector for 2016; male 530 EUR, female 505 EUR

One of the most competitive labor market in the region with an average salary of 340 EUR/month; male 350 EUR/month, female 328 EUR/month

*Minimum salary in the amount of **178 EUR***

Potential workforce for the ICT sector

Students enrolled by Faculty and Programmes, academic year 2016-2017, in Public Education

	Total	Man	Women
Total bachelor students in Albania	**79,743**	**32,828**	**46,915**
Tirana University	18,517	4,529	13,988
Faculty of Natural Sciences	5,456	1,830	3,626
University of Polytechnic	9,827	6,803	3,024
Faculty of Information Technology	1,202	806	396
University "Aleksandër Xhuvani"Elbasan	10,299	3,899	6,400
Faculty of Natural Sciences	1,387	855	532
University "Luigj Gurakuqi" of Shkodra	6,661	2,303	4,358
Faculty of Natural Sciences	1,102	271	831
University "Eqrem Çabej" Gjirokastra	981	403	578
Faculty of Natural Sciences	397	181	216
University "Aleksandër Moisiu" of Durrës	12,170	5,110	7,060
Faculty of Information Technology	2,057	1,352	705

*Almost **15%** of total students on the public universities are students enrolled on ICT programs.*

***54%** of students enrolled on the faculties related to ICT programs and majors are women*

Number of graduated students on the public universities

Academic years	2011-12	2012-13	2013-14	2014-15	2015-16
Vocational only	2,844	4,322	3,136	4,702	4,507
Post secondary not tertiary	242	145	164	125	335
Bachelor only	20,871	20,351	17,469	19,152	18,652
Total tertiary	29,111	30,365	29,137	33,529	31,530

Source: Institute of statistics

*No official data is available on graduated students from ICT studies, however as per unofficial data, the trend is similar as for the overall education and is around **20%** graduated students from the total enrolled per year.*

ICT education system in Albania

1,496

computers labs throughout schools in Albania.

Computer labs are equipped with 5 to 15 computers for pupils plus one for the teacher.

- Government priorities in the area of ICT in education in Albania are:
  - The provision of the infrastructure of schools for the use of information (computer, laptop, smart table, tablets);
  - internet with high-speed and online access opportunities in other environments within schools, not only in laboratories;
  - Technical support that ensures efficient use of infrastructure.

University	Degrees
Canadian Institute of Technology	• Software engineering • Industrial engineering • Computer engineering and IT
Albanian University	• Electronic Engineering, • Computer Engineering, • Information Technology • Mechatronics Engineering • Electrical Engineering,
Epoka University	• Computer Engineering • Communication Engineering
University of New York	• Computer Science • Information Systems
University of Tirana	• Natural sciences
Polytechnic University	• Information Technology

Source: Market research

III Review of the existing market

ICT usage

ICT usage 2016 (in %)

Sector	Companies using computers	Employees using computers at work	Companies with internet access	Companies that did e-commerce sales
Manufacturing	92.7	8.6	97.3	4.3
Utilities (energy, water)	99.3	16.8	100	2.8
Construction	93.3	16.8	95.2	2.1
Wholesale & retail	94.4	28.7	97.1	6.3
Transportation and logistics	99.3	25.7	100	19.2
HORECA	100	31	92.7	11.4
Information and communication	100	71.1	100	24.7
Real estate	100	29.3	95.4	-
Professional, scientific and technical activities	100	61.7	100	12.1
Administrative and support service	100	64.6	97.4	9.2
Computer & communication maintenance	100	59.1	50	-
Total	95.6	28	96.8	7.1

Source: Institute of statistics

*There is an increase by **4%** of employees using computers at work in 2016 compared to 2015*

*Internet access is provided from more than **96%** of the companies*

*More than **95%** of companies use computers, sectors like IC, Real estate, HORECA at the level of 100%*

IV ICT sector support

Mapping of government involvement

Policy maker level

- Ministry of Infrastructure and Energy responsible for ICT infrastructure
- Ministry of Finance and Economy responsible for business environment
- Ministry of Education, sports and youth responsible for science, academia and youth
- National Council for Investment
- National Council of High education and science
- Consulting council for businesses
- Council of strategic planning

Executive level

- AKKSHI – National Agency for Scientific research and innovation
- AKEP – Electronic and Postal Communications Authority
- AKSHI – National Agency for Information Society
- AIDA – Albanian Investment & Development Agency
- Chamber of Commerce and Industry

Public funding mechanism

Referring to National strategy for Science, technology and innovation (2017-2022) the allocated budget for research and innovation activities amounts to 66 million euro

Budget already allocated amounts to 47.5 million euro out of which:

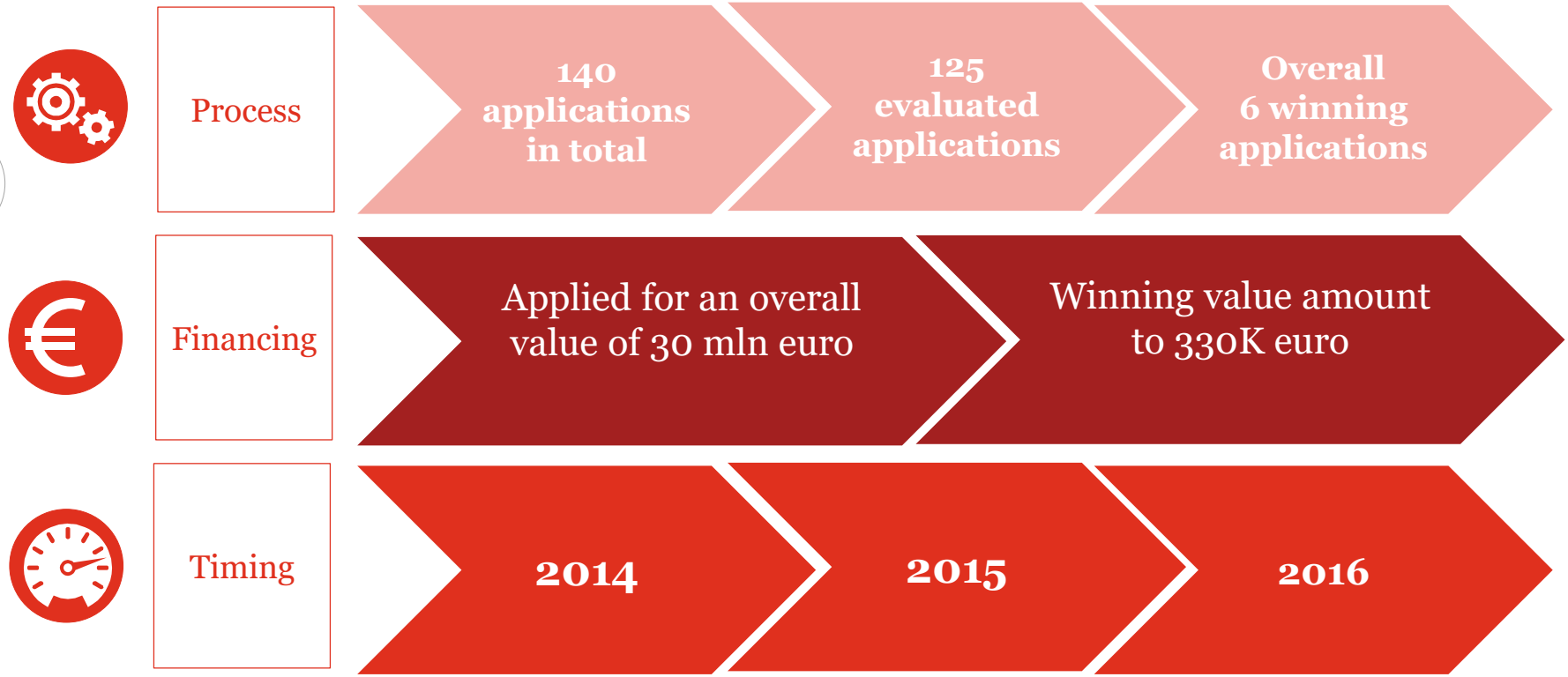
1) Ministry of lines and related resea institutes – 24.4 million euro
2) HEIs – 16.3 million euro
3) Donors – 7.4 million euro

Lack of financing in the amount of 18.5 million euro that should be covered through Medium Term Programme budget

Source: National strategy for Science, technology and innovation (2017-2022)

Horizon 2020 funding mechanisms

140 applications delivered from 50 organizations (31% private companies, 27% public universities, 5% research and development institutions) that have applied for Horizon 2020 in Albania



Source: National strategy for Science, technology and innovation (2017-2022)

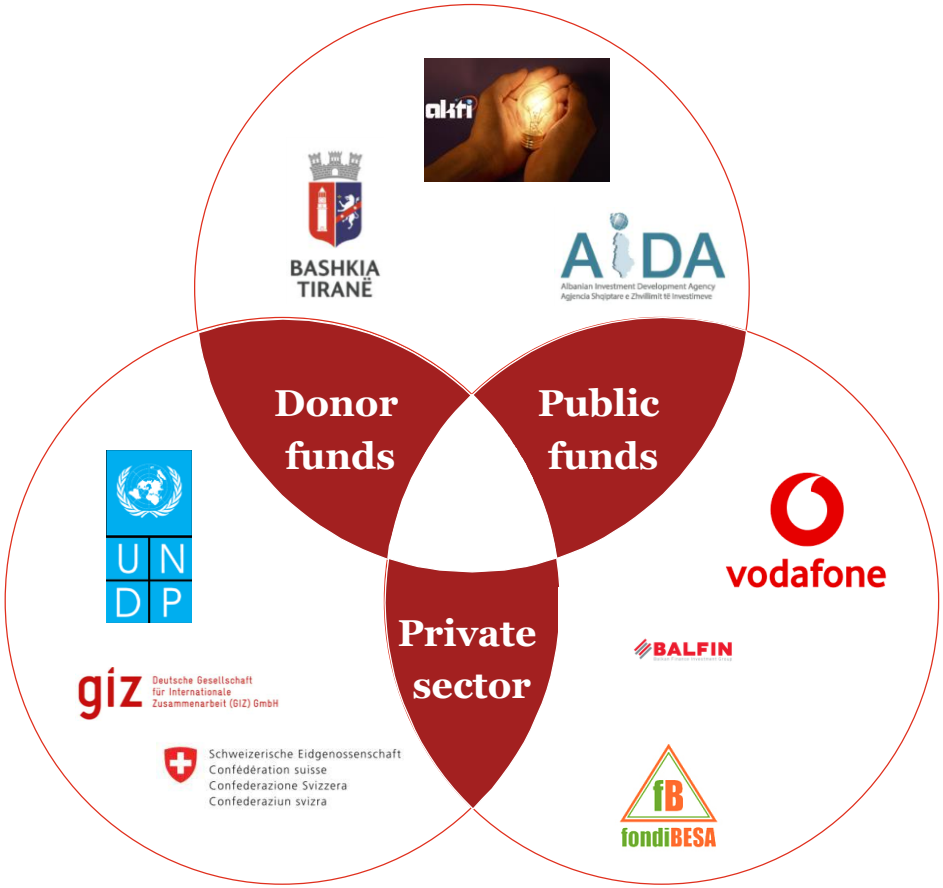
Other donor and institutional collaborations

Other Donor collaborations

- European Enterprise Network (SME support)
- Albanian Euraxess Service Network
- Web-in Union Scientific Research
- COSME Financing programme for SMEs
- EU Seventh Framework agreement –F7
- TUBITAK (Albania-Turkey collaboration)
- INCO Network (2011-2013)

Source: National strategy for Science, technology and innovation (2017-2022)

Other sources of funding



- In terms of financing main sources remain the donor ones with USAID and Italian donors being very active in promoting the competitiveness of the SME sector and the ICT industry, Germany's GIZ and UNDP in supporting vocational training and Swiss-contact promoting new ventures in the social business space.
- On the government side main actors remain the Agency for Investment and Development in Albania (AIDA), National Agency for scientific research and innovation (NASRI)and Municipality of Tirana as well. NASRI allocates research grants on a competitive basis and it seeks to foster bilateral projects between science and industry.
- The Albanian Investment and Development Agency (AIDA) has established a number of new funding instruments, like the Innovation Fund assists SMEs and start-ups seeking scientific collaboration by providing matching funds up to 10k Eur. Innovation voucher schemes also are under consideration.
- Even the private sector has became an active actor in the last years trying to support development of SMEs and startups based on small sized grants (average of 5k Eur) covering the initial launching if ideas, products and services.

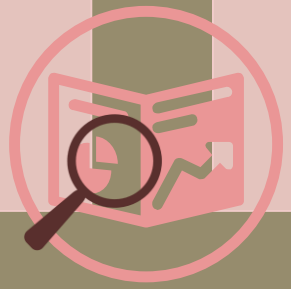
V Government policies and regulation

General laws

- Albanian Labor Code and Law
- Law on Trading companies
- Law on Personal data protection
- Law on Strategic Investment
- Law on health and safety at work
- Law on labor inspection and State Labor Inspectorate
- Law on the status of civil employees
- Law on Public procurement
- Law on whistle-blowers

Industry specific laws

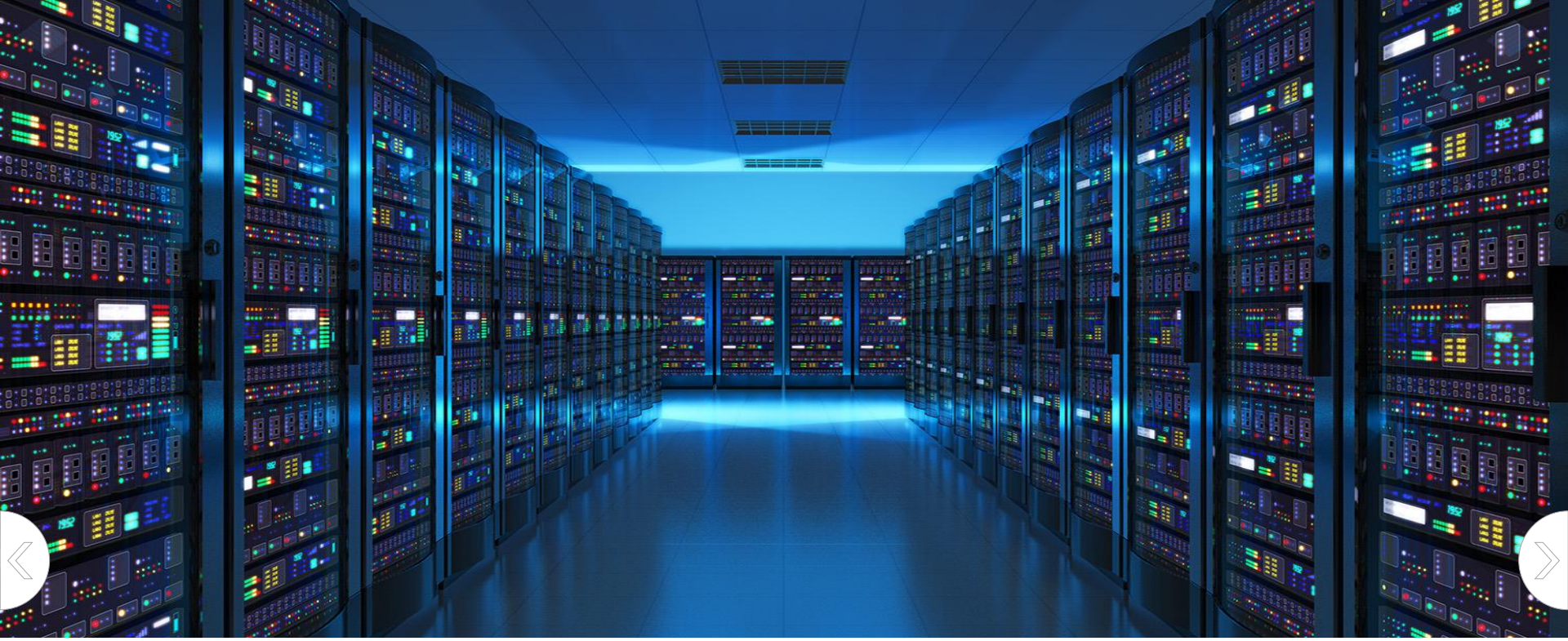
- Law on Science and Technology Development
- Law on Higher Education
- Law on the Academy of Science in Albania
- Law on Memorandum of Understanding between Albania and EU in the light of 7th framework agreement for RDI
- Law on the agreement between Albania and EU for the “Horizon 2020” programme



VI National strategic documents

National strategic documents

Digital Agenda 2015-2020	• Development of legal and institutional framework; • Development of ICT infrastructure and the facilitation of cheap and fast internet; • Development of e-governance; • Education related to ICT knowledge; • Promotion of e-business.
National strategy for Science searches, Technology and Innovation (NSSTI) 2017-2022	• Improvement of legal, institutional, financial serving to science, innovation and technology • Support to scientific researches as an incentive of innovation and technology development in the business community • Raise awareness among key players like business community, media, and public
National Strategy for Development and Integration 2014-2020	• Modernization of ICT in public institutions • Develop e-governance and offer interactive public services via internet for the citizens and the businesses • Complete switchover from analogue to digital broadcasting



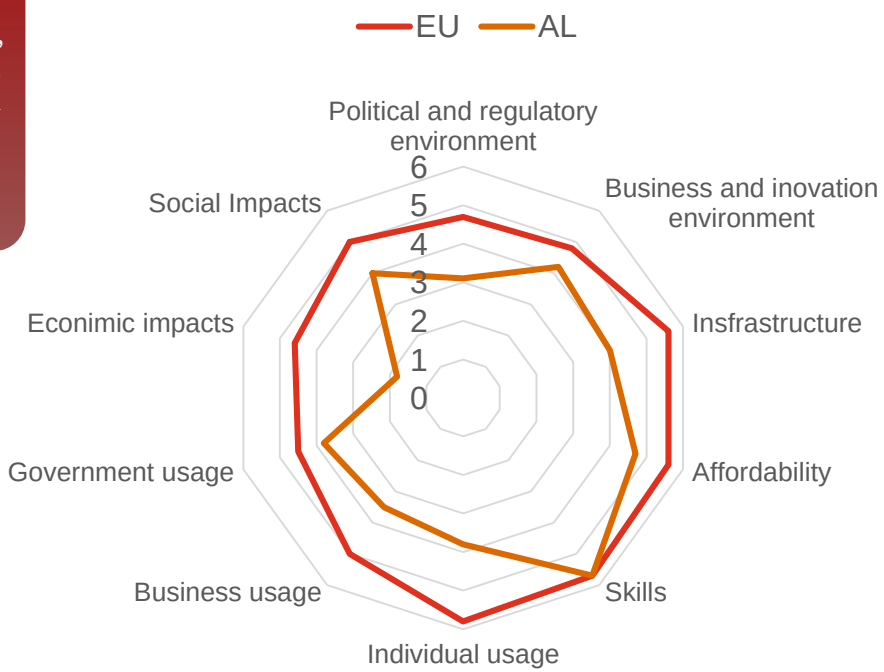
VII ICT infrastructure

ICT Infrastructure

The digital transformation gaps between Albania and the EU, which compare the values of digital transformation indicators to respective EU averages, suggest the level of digital transformation falls short relative to more propulsive regional peers in Central Europe and the Baltics (CEB). These gaps are marked by significant deviation from EU averages both in infrastructure and individual use indicators.

In terms of the proportion of households with computer and internet access at home. Albania has the weakest performance in these indicators, lagging behind EU average by more than 50 percent.

Network readiness index in 2016



Source: Study on The Impact of Digital Transformation on the Western Balkans, issued 2018

Findings from EU progress reports

Ensure the VET Law is fully implemented, including finalization of the secondary legislation, and review/expand the current funding system and arrangements for VET.

Finalise the delayed digital switchover process, free the digital dividend and revise the national broadband plan with clear objectives and targets

The percentage of research & development expenditure in relation to GDP remains low at around 0.35 % of GDP.
Investment in research and measures to strengthen research and innovation capacity at national level need to be stepped up.

Source: EU Albania 2018 report

Kosovo

KEY FACTS 2016/2017

Name:	Republic of Kosovo
Area:	10,908 km²
Population:	1.8 million
National currency:	Euro (EUR)
GDP in current prices:	6.65 billion EUR
GDP per capita:	3,298 EUR
Inflation rate:	1.5%
Corporate tax:	10%
Unemployment rate:	30.7%

Advantages of doing business

Business-friendly
- Set up a business in 3 business days
- Reduced administrative burdens (one-stop-shop)
- Online application

Young population
- 42% of the population under the age of 25
- Majority of talent pool with university-level education

Strategic location
- Located in the heart of the Balkans
- Modern road infrastructure to capital cities in neighbouring countries
- Driving distance from Macedonia and Albania

Low labour costs
- Average private sector salary approx. EUR 400
- Wide and low-cost pool of young, English-speaking workforce.

Low taxes
- 10% corporate tax rate
- 0-10% personal tax rates
- Low social security contributions (5% contribution by employee and employer)

Fast-growing economy
- EUR is the official currency
- Strong macroeconomic stability
- Average GDP growth rate of 3.5% in the past 3 years
- Low inflation rate

Source: Kosovo Investment and Enterprise Support Agency; World Bank; Kosovo Statistical Agency; CIA Factbook

Areas for improvement

Increase awareness of the importance of digital skills in the economy

- There is a lack of knowledge and resources among stakeholders which is necessary for the promotion of IT sector.
- More efforts needed to establish an institutional framework for the promotion of the IT sector.

Promote and enhance skills specialization

- IT companies are not highly specialized or differentiated in terms of technologies, target industries (vertical specialization) and specific functional areas (horizontal specialization).
- The domestic market in Kosovo is comparatively small and underdeveloped, hence creating difficulties in generating growth impulse in the IT sector or promoting local innovation.
- There is a lack of information on IT market and technology trends, especially with regards to potential export markets

Improve formal and vocational IT education

- The curriculum of the education system (tertiary education) does not a meet the needs and requirements of IT companies, which negatively affects the competitiveness of local IT companies.
- Specialized formal and training-focused education programs are necessary to increase the skill set of local IT graduates and professionals.

Source: Digital Skills for Jobs – Kosovo Digital Economy (2016)

I ICT Ecosystem

ICT ecosystem (1/2)

Ecosystem Dimension	Challenge / Opportunity
1. Strategic Sectors	Focus limited resource and funding on sector activity where Kosovo can develop a sustainable cluster of industrial activity. - ICT - AgriTech - Energy & Renewables - Tourism
2. Policy and Regulatory environment	Seek to design an efficient policy and administrative environment that does not impose unnecessary administrative burdens and that facilitates the growth of supporting industries. - Create an efficient administrative and policy environment - Create a tax and legal environment that attracts equity investors
3. Digital Skills & Talent	- Develop more and better skilled graduates - Encourage entrepreneurship as a career choice - Improve research and the collaboration between Science and the start-up ecosystem
4. Start-up Initiatives	**Initiatives that support start-ups in their early stages** **Mentoring** - **Co-working spaces** - **Funding** - **Incubation** - **Acceleration**

Source: TechcityUK and PwC, Digital ecosystem opportunity for the Western Balkan region 2018

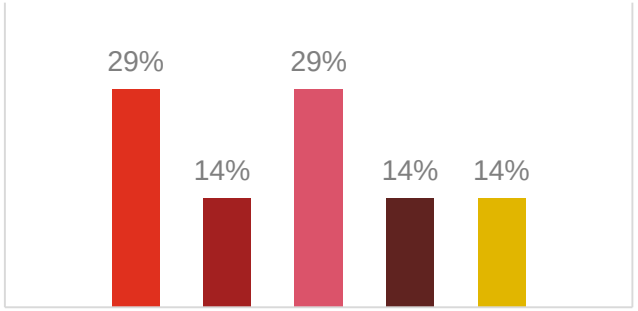
ICT ecosystem (2/2)

Ecosystem Dimension	Challenge / Opportunity
5. Scale-up	Initiatives and resources that support the growth and scaling phases
6. Collaboration	Develop closer ties between ecosystem, R&D facilities and private industry to combine strengths locally / in clusters
7. Profile	Connecting and promoting the developing ecosystem, within Kosovo and internationally
8. Ecosystem initiative	Provide a voice for and coordinating entity that can orchestrate ecosystem development initiatives

Source: TechcityUK and PwC, Digital ecosystem opportunity for the Western Balkan region 2018

Survey results (1 of 2)

How adequate is the current policy and regulatory environment for your business? (taxes, permits, labor laws, etc.)



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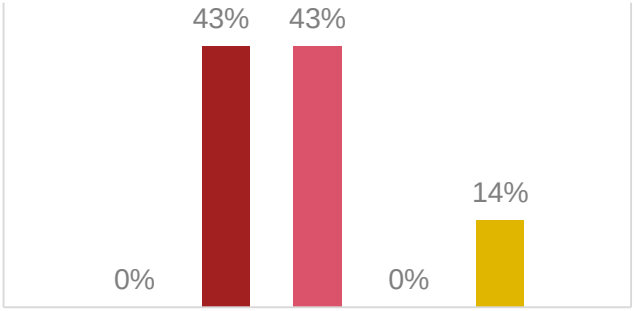
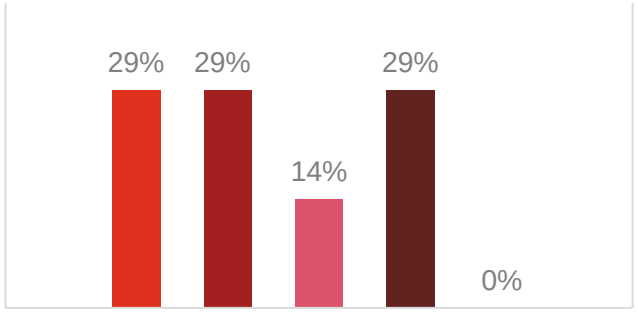
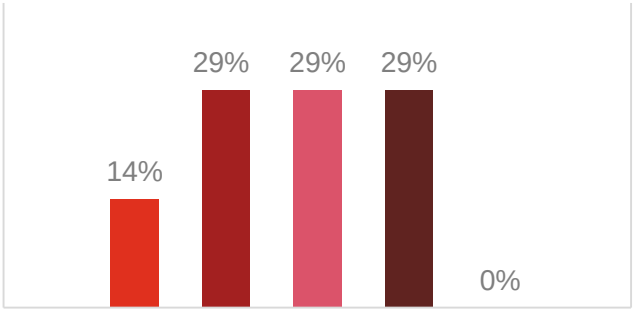


Rate the quality of schools and training for people working in the digital tech sector in your local area?



To what extent is accessing finance a challenge for your company / members of your ecosystem

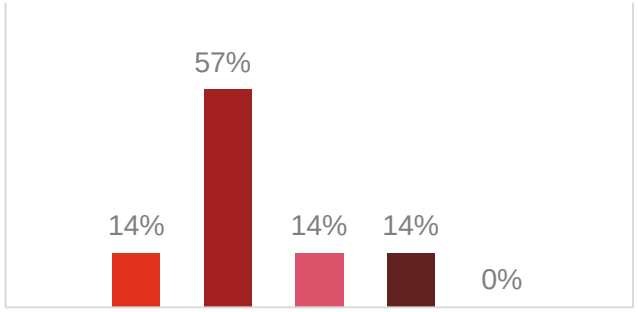


Legend:

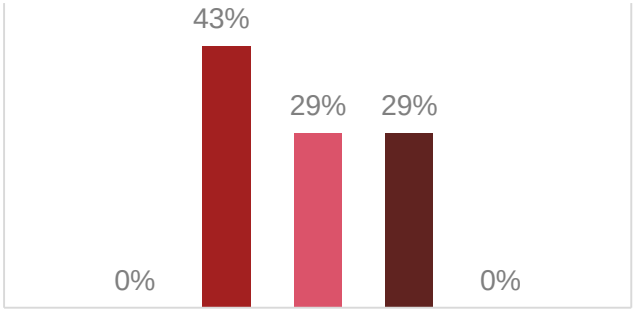
- Extremely unhelpful
- Unhelpful
- Neutral
- Good conditions
- Great conditions

Survey results (2 of 2)

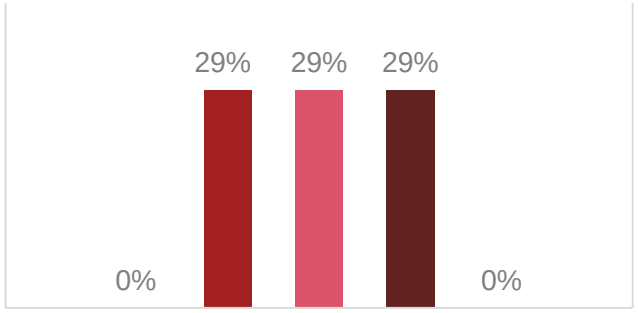
To what extent is recruiting skilled workers to your company / for start-ups a challenge?



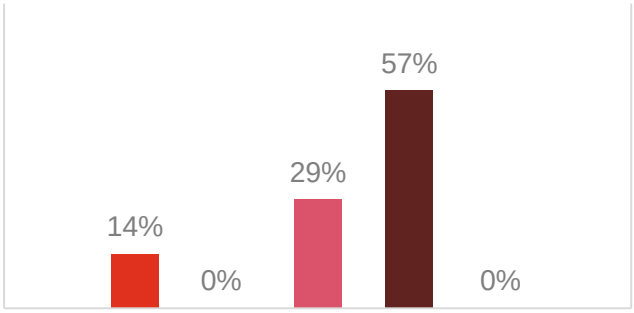
To what extend is access to mentoring and advice a challenge to your company / ecosystem?



How satisfied are you with your local digital infrastructure (broadband & mobile in regards to availability, speed and cost)?



How satisfied are you with the availability of affordable workspace / co-working spaces in your local area?



Legend:

- Extremely unhelpful
- Unhelpful
- Neutral
- Good conditions
- Great conditions

Survey results - summary (3 of 3)

Seven representatives of companies and organizations in Kosovo were selected as participants for this study, including entrepreneurs, executive directors, CEOs and program managers.

Advantages

The main advantages of ICT ecosystem are:

- Availability of affordable workspace
- Access to incubators and accelerators

The main issues companies are currently facing are:

- Hiring skilled workers
- Accessing advice and mentoring

Disadvantages

Results show that participants are mostly dissatisfied with:

1. **Current policy and regulatory environment**
2. **Development of policies and regulation over the last 3-4 years**
3. **Quality of schools and training for people working in the digital tech sector**
4. **Access to finance**

Existing ICT ecosystem

Non-Government Organizations

1. Kosovo ICT Association (STIKK)

- The Kosovo ICT Association (STIKK) was established in 2008 and aims to help create a better ICT business environment by improving standards and educational opportunities, and advocating with the government on behalf of its members to ensure that the sector will attract new business and investment.
- STIKK is a key contributor to the Kosovo's IT strategy, a member of the Steering Committee for the implementation of the Kosovo IT Strategy and it also conducts the annual IT Barometer study providing an insight of the IT industry of Kosovo and market trends. STIKK currently accounts for 125 +members, which represents 90% of the ICT market of Kosovo. STIKK together with relevant ministries and government agencies recently pioneered the establishment of the first Tech Park in Pristina.

2. CEED Kosovo

- CEED Kosovo is an organizing providing entrepreneurs training, connections to finance and access to new markets. They offer peer-to-peer learning programs, relationship building through mentoring and connecting and helping businesses with accessing capital and financing. It also implements several donor projects on entrepreneurship, business consultancy and executive development.

3. UNICEF Innovations Lab

- UNICEF Innovations Lab is a unit of UNICEF Kosovo that aims to help young people with innovative ideas get start-up funding (up to EUR 3k) and coaching/mentorship throughout implementation of their project. They support young people between the ages 14 – 25 with sustainable business plans with a social impact/change component.

Existing ICT ecosystem

Incubators / Accelerators

1. Innovation Center Kosovo (ICK)

- Innovation Center Kosovo (ICK) was established and funded by the Swedish and Norwegian Embassy in Kosovo. It runs a structured incubation program with access to mentors and international funding networks. 123 startups have participated so far, in 15 calls for applications. ICK Incubator provides pre-incubation, incubation, training and courses, and co-working spaces. Together with STIKK, ICK is one of the key players in the Kosovo ICT ecosystem.

2. Gjirafa Lab

- Gjirafa Lab is a startup factory made for Internet entrepreneurs and provides space, mentoring, networking, technology, and funding to develop their business in Kosovo and the region. It was founded by Mergim Cahani of Gjirafa, Inc., a Kosovo startup success story, in funding partnership with USAID.

3. Innovation Center Gjakova

- ICG is an innovation center based in Gjakova, a city in Kosovo. It was established by the Ministry of Education, Science and Technology, along with the local municipality and with the support of the British Embassy. It provides co-working space, incubation support services and trainings for participants.

4. Prishtina Hackerspace

- Prishtina Hackerspace is a member-based co-working and open experimentation space established exclusively for technological, educational, cultural and scientific purposes. The aim of the space is to provide workspace, equipment and other resources for communal use by all members; encourage continued and after-school learning and create a safe and open environment for experimentation in technology and art.

Government Institutions

1. Ministry of Innovation and Entrepreneurship

- The recently established Ministry of Innovation and Entrepreneurship (MIE) aims to promote innovation & entrepreneurship in Kosovo, especially in light of the strategic importance of the ICT sector as a result of national strategies for development.
- It plans on establishing the National Council of Innovation and Entrepreneurship, as well as Centers of Innovation and Entrepreneurship across major cities in Kosovo.

2. Ministry of Economic Development

- The Ministry of Economic Development (MED) is the key institution in charge of drafting of policies and strategies on the overall economic development of Kosovo, including the provision of support to information technology and innovation. MED has recognized that Kosovo's economic growth in the ICT sector depends on its ability to support the competitiveness and growth of the ICT businesses.

3. Kosovo Investment and Enterprise Support Agency (KIESA)

- Kosovo Investment and Enterprise Support Agency (KIESA) is the Kosovar state agency mandated to promote and support investments, exports, tourism, SMEs, and special economic zones in the Republic of Kosovo.
- KIESA runs an SME Grant Scheme that includes Consulting Vouchers for small and medium enterprises to assist them with their business needs as well as export-promoting. It also works closely with foreign donors to run financing schemes for MSMEs

II & III Review of the existing market & available workforce

Overview of the existing ICT market (1/3)

120

IT-software focused businesses

3,000

IT professionals employed

78%

of companies surveyed by STIKK are engaged in export services

- Kosovo's ICT sector is dynamic and constitutes a vibrant sector of the economy.
- Based on World Bank indicators, **Kosovo's share of ICT-related exports** (as a % of total service exports) ranged between **10 – 15% for the years 2013 – 2016**.
- Data from 2015 shows that 571 registered businesses have an ICT-related primary business activity code. However, many are micro and small enterprises not necessarily engaged in the ICT services sector, so an industry association study has determined that approximately 120 businesses are IT software-focused and employ around 3,000 IT professionals.
- **88% of the Kosovo ICT companies are domestic**, 3% have equal ownership by Kosovar and foreign owners, and 8 % are foreign-owned companies.
- Disaggregation by gender shows that **87% of businesses are owned by men, and only 13% by women**. Similarly, **this is mirrored in the employee gender structure in the ICT sector**, whereby the proportion of male to female employees is 80/20%.
- The majority of companies (88%) are owned by individuals below the age of 50.
- More than 68% of companies surveyed by STIKK are ISO certified, and most hold some type of technical certification (PMP, Agile/Scrum, Microsoft etc.)
- 78% of companies surveyed by STIKK are engaged in export services, and list **price, quality and technical know-how** as their core competitive advantages.

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Overview of the existing ICT market (2/3)

62%

of services provided are custom development/outsourcing

74%

of companies have < 20 employees

767.42 Eur

is the average monthly salary for IT professionals

- Kosovo ICT companies, as surveyed by STIKK, mainly work with clients in the IT Services & Outsourcing sector.
- The majority provide Custom Development / Outsourcing (62%) and IT Project Management (42%) services.
- In terms of employees, companies are generally comprised of small teams. Approximately 47% of them have between 10 – 20 employees, and only 26% have more than 20 employees.
- The workforce is considered educated and qualified, if formal education is the determining factor. Companies surveyed by STIKK reported that **74% of their employees have either a university or post-graduate degree**.
- All companies reported that 10 – 25% of their employees have left the company, and **73.7%** of them **think that brain drain has a negative influence on their business**.

Level	Monthly salary range (EUR)
Junior (entry-level) developer	250 - 400
Junior software developer	400 - 500
Experienced (3+ years) software developer	500 - 900
Business analyst/project manager	900 - 1200
Senior (5+ years) software developer	1,200 - 1,600
Department manager	1,600

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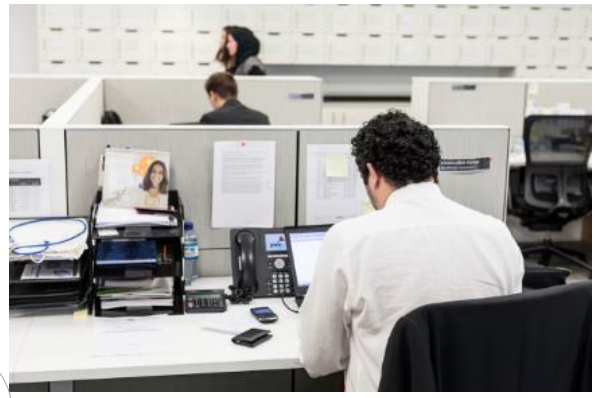
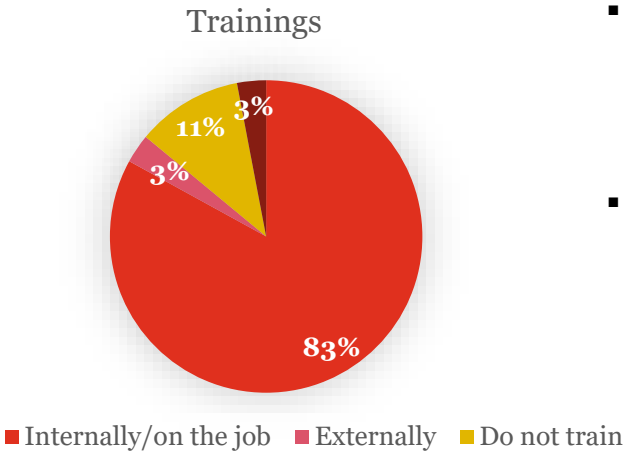
Overview of the existing ICT market (3/3)



- **80% of surveyed companies believe that the lack of skilled/qualified workforce is a key barrier for the business operations.**
- There are **deficiencies in both technical and management skills**, which is attributable to inadequate and insufficient education at university level. In particular, skills such as marketing, sales, project management and business analysis are lacking, making growth and expansion into international markets more challenging.
- There is no established system for continuous education and training, and there are no institutions providing specialized trainings for IT professionals.
- About 16 companies provide standardized trainings for CISCO, Microsoft etc., but there is an evident dearth of technical-oriented programs to increase the proficiency of IT professionals in programming or database languages. STIKK, ICK and Cacttus Education have established training academies in an attempt to address this challenge.
- **83% of surveyed companies generally provide trainings in-house**, and the average spending per employee on trainings was EUR 600, based on a 2013 study.



ICT Sector study Macedonia, Albania and Kosovo 2018
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ICT education system

- There are **6 universities** in Kosovo teaching computer science & IT-related subjects, producing ca. **350 IT graduates per year.**

1	University of Pristina (UP)	National public university
2	University of Business & Technology (UBT)	Private university
3	American University of Kosovo (AUK)	Private university
4	Iliria University	Private university
5	University of AAB	Private university
6	University of Prizren	Local public university

- In addition to universities, there is a private VET institution established by a prominent local IT company (Cacttus), **Cacttus Education**, which offers diplomas in network and system administration, and web and mobile application development. In addition to academic programs, it also offers trainings and a children's learning program.
- Other educational initiatives include Jcoders Academy and The Digital School which provide learning programs for young people, as well as Open Data Kosovo, an NGO that provides trainings and mentoring in ICT-related topics.
- The current state of ICT education in Kosovo reveals deficiencies both in quality and quantity.
- The ratio of PC/students is 1/50, and there is a high dropout rate from university due to employment before graduation. Universities are also severely underfunded and require substantial investments in infrastructure and staffing.
- **91% of IT firms surveyed by STIKK agree that educational programs (curricula) do not address the required skills and knowledge in the IT sector**.

Sourcing opportunities

>55%

view the BeNeLux countries as a potential export destination

Top 10 product & service portfolio

1. Software development
2. Web development/design (front-end)
3. Web development (back end)
4. Mobile apps
5. Software testing
6. Mobile testing
7. 3D modeling and animation
8. Support services
9. Configuration management
10. Customizing services

- There are persistent trends in programming languages used (**Java/JavaScript and HTML/XML**) and database technologies (**MSSQL, mSQL/MySQL and SQL**).
- In general there is a lack of technical specialization and differentiation among the companies in terms of technologies, target industries (vertical specialization) and specific functional areas (horizontal specialization).
- According to the ICT Market Analysis and Skills Gap Analysis Kosovo, **the following technical skills are needed the most by IT companies: CCNP, Java, C++, MySQL, Oracle PHP, ASP, Perl, Python, HTML, Linux**.
- In a 2013 STIKK survey, the primary foreign markets to which exports were made are Germany, Austria and Switzerland (29%), followed by Scandinavian countries (22%), France and BeNeLux (14%), North America (10%) and the UK (10%).
- In 2016, more than 55% of STIKK survey respondents viewed the BeNeLux countries as a potential export destination.
- Overall, on average, 95% of companies surveyed sell at least 50% of their products and services in the domestic market. When comparing direct domestic sales to international sales, interviewed companies responded that **75% of them sold more than 90% of products and services domestically**.

IV ICT sector support

Funding Sources (1/2)

1. Grant Schemes

- In 2016, Association of Regional Development Agencies (ARDA) administered EU funds for SMEs and awarded approximately EUR 1 million to recipients from various industries, though very few from the ICT sector.
- In 2017, the EU opened its Grant Facility for MSMEs in Kosovo, where Lot 1 was for low capital intensive sectors (including ICT), where funding was available between EUR 20,000 – EUR 100,000. The awardees have not yet been announced.

2. Loan facilities

- There are currently no startup loan programs or products in the Kosovo market.
- To alleviate credit requirements from commercial banks, the Kosovo Credit Guarantee Fund was established by USAID and Ministry of Trade and Industry, which
- Kosovar SMEs are also eligible for loans with reduced collateral requirements through ProCredit Bank Kosovo, a partner financial intermediary of the WBEDIF (Western Balkans Enterprise Development and Innovation Facility) Guarantee Facility.

3. VCs / Angel Investors

- Kosovo does not have any VC firms and angel investors were previously organized under KOSBAN (Kosovo Business Angels Network), though this organization is now defunct. Nevertheless, local angel investors are recognized in the ICT community and regularly appear in ICT events and take part in initiatives to meet startups.

Funding Sources (2/2)

3. Funds

- Through WB ENIF (Western Balkans Enterprise Innovation Fund), Kosovo SMEs are eligible to obtain equity and quasi-equity financing to stimulate and support commercially viable companies in the region. The fund is managed by South Central Ventures and ENIF investors are EC, EIF, EBRD, KfW together with institutional and private investors from the Western Balkans. ENIF also includes investments from the beneficiary economies of the Western Balkans.

4. COSME

- COSME, the first EU programme that Kosovo has joined, will bring new possibilities to Kosovo entrepreneurs for increasing the competitiveness of SMEs. It will support projects on a wide range of topics that include clusters, SME internationalisation, building entrepreneurship skills, tourism, reducing the administrative burden for companies and protection of intellectual property rights. It will also help SMEs identify funding sources.

5. Horizon 2020

- Kosovo is eligible to participate in the EU Research and Innovation Program “Horizon 2020”, allowing participation of private sector companies, academic institutions, associations and researchers. Currently uptake in Kosovo is minimal and awareness of Horizon 2020 funding is needed.
- There is very limited, almost inexistent government support for ICT. Special industry zones or incentive schemes (e.g. like in Macedonia) do not exist.
- The only financial support provided was Micro, Small and Medium Enterprise Grants project supported by the EU Office in Kosovo, co-financed by Ministry of Trade and Industry. The project provided 36 grants to MSMEs with the potential to export and import substitution. Grants were provided across different sectors such as metal processing, wood processing, textile, food processing, ICT, glass processing and automotive industry etc.

V & VI National strategic documents & government policies

National strategic documents on ICT and Government policies and regulations

1. **Kosovo's Economic Reform Programme (ERP)** recognizes the need for further extension of the ICT network infrastructure and its link to socio-economic development, and lists the establishment of the digital technology park as one of the key measures to be taken.
2. **Kosovo National Development Strategy 2016-2021**, through its measure "Deployment of information and communication technology infrastructure" identifies needs which lay out specific points to be addressed in order to enhance the competitiveness of Kosovo's digital businesses.
3. **Kosovo National IT Strategy** – sets the sector's overall goal, to become the main driver for economic growth, employment and innovation by 2020 through increasing the international competitiveness of the Kosovo IT industry based on digital excellence. The main beneficiary and target group of the strategy is the Kosovo IT industry.
4. **Digital Agenda for Kosovo 2013-2020** - is in compliance with the objectives set out in the Communication from the European Commission of 19 May 2010 to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions "A Digital Agenda for Europe" (COM (2010) 245 final) and aligned with the Communication from the European Commission of 3 March 2010 "A strategy for smart, sustainable and inclusive growth" (COM (2010) 2020 final).

- Kosovo's legislation covering the field of ICT is generally harmonized with the relevant acquis of the EU. Relevant laws include:
  - *Law no. 04/L-109 on electronic communications*
  - *Law no. 04/L-094 on the information society services, which includes eCommerce law, eSignatures law, ePayments law, electronic contracts, etc.*
  - *Law on copyright and related rights, Law on amending and supplementing the Law no.04/L-065 on Copyright and Related Rights*
  - *Law on the Protection of Personal Data (to be harmonized with GDPR)*
  - *Law on Prevention and Fight of the Cyber Crime*

Conclusions and recommendations

Conclusions

1. **Growing ICT Sector**
   ICT sector is constantly growing, with 80% of surveyed companies expect the total number of employees to increase in the next 12 months, **where 20% of them expect this number to increase by 50%.**
2. **Lack of skilled labor**
   80% of surveyed companies believe that the **lack of skilled/qualified workforce is a key barrier** for the business operations.
3. **Lack of government support**
   ICT Sector is not supported enough with **grant schemes, loan facilities, VCs/Angel Investors.**
4. **Inadequate IT education available**
   The current state of ICT education in Kosovo reveals deficiencies both in quality and quantity. Universities are underfunded and require substantial investments in infrastructure and staffing.

Recommendations

As survey results show, one of the main drawbacks in ICT sector in Kosovo is hiring skilled labor. Potential projects that may be implemented in Kosovo to make a difference in ICT skills development sector:

- Increase awareness of youngsters on the potential benefits of ICT skills acquisition
- Increase awareness on the mechanisms of ICT skills acquisition
- Improve cooperation between universities, training companies and employers to achieve mutual benefit
- Provide grants to training providers to lower training costs
- Assist training providers in providing the most in-demand technical skills (programming languages, project management etc.)

Business opportunities in the IT sector

1 National focus on IT

- The National IT strategy envisions for *"**IT to become the main driver for economic growth**, employment and innovation until the year 2020 by increasing the international competitiveness of the IT industry based on digital excellence."*
- According to a survey by STIKK (2016), core competitive advantages of the IT outsourcing companies are: **price, quality and technical know-how.**

2 IT & BPO Outsourcing – a fast growing sector

The Government of Kosovo is working to position the country as a regional hub for information technology (IT)-related products and services, building on the strong IT and English-language skills within the workforce. **There are a growing number of IT companies focused on outsourcing for European and U.S. companies, and the number of inbound and outbound call centers is growing.**

3 Export-oriented market

- **78% of companies surveyed** by STIKK **are engaged in export services**.
- In 2016, more than 55% of STIKK survey respondents viewed the **BeNeLux countries as a potential export destination**.

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